a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JUNE 1960

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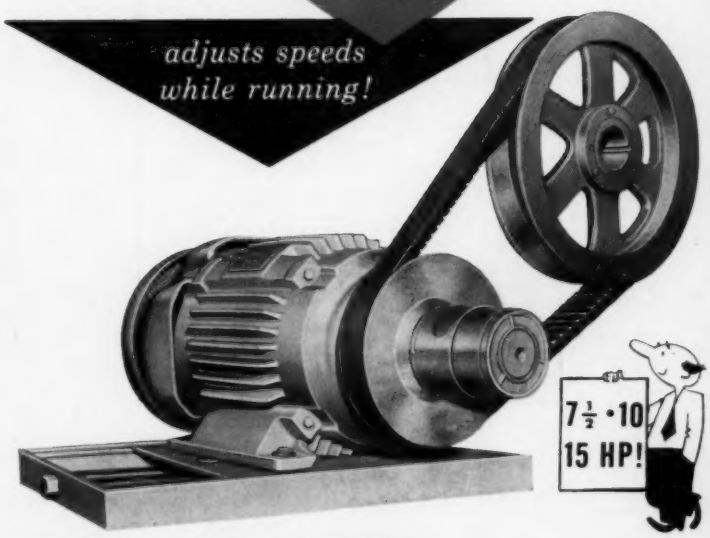
New Low Cost
TEXTILE PULLEY
adjusts speeds while running!



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A low cost unit, the compact 975-T features REEVES' exclusive "close grooving" for positive lubrication . . . free sliding shifting action.

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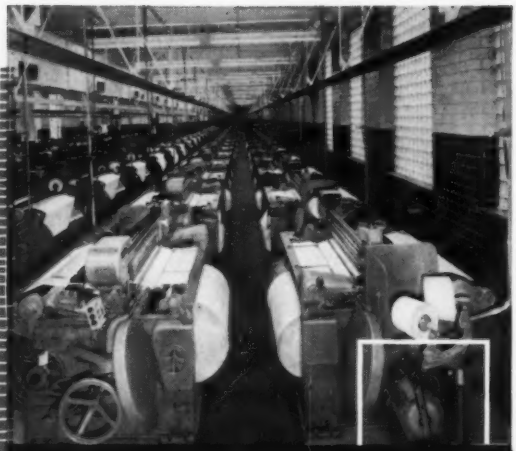
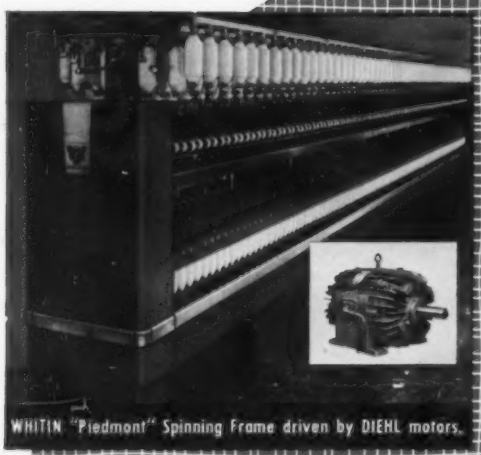


DRAPER Shuttleless Loom with DIEHL Power Transmitter drivers.



WHITIN "Piedmont" Spinning Frame driven by DIEHL motors.

FOSTER Winder operated by DIEHL Power Transmitters.

DIEHL* QUALITY AND PROGRESS

Pioneering in automatic drives and electronic controls for the Textile Industry

NOTE THESE IMPORTANT DEVELOPMENTS:

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- DIEHL Power Transmitters drive the spectacular new DRAPER Shuttleless Loom.
- DIEHL developed the motor for WHITIN MACHINE WORKS new "Piedmont" advance designed Spinning Frame.
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- DIEHL developed the Power Transmitter for FOSTER MACHINE COMPANY Winder.
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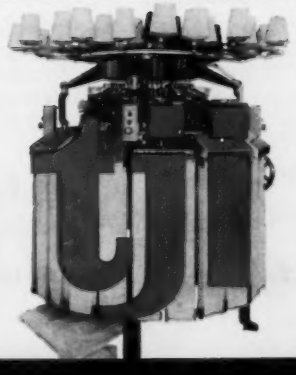

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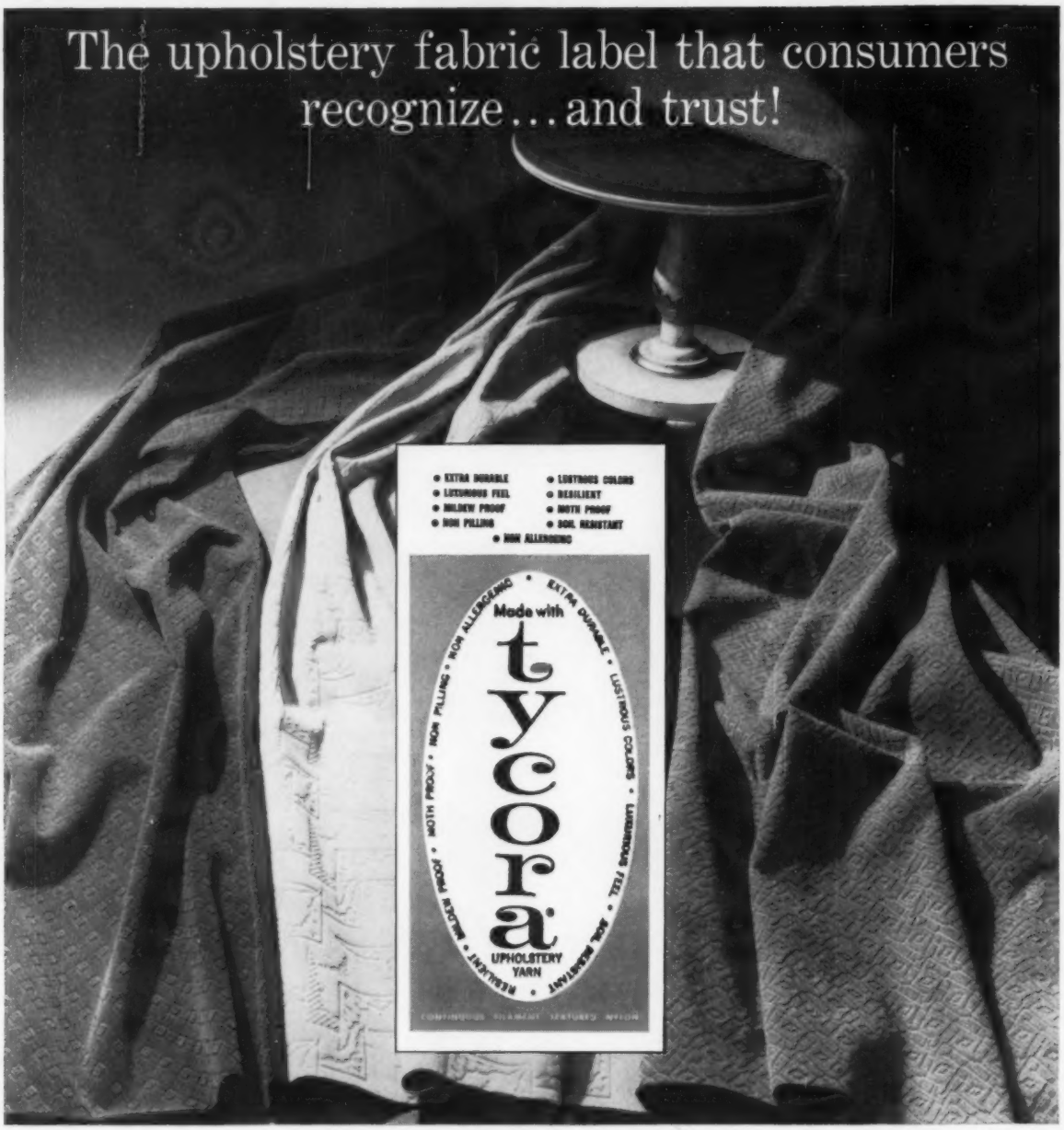

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Textile Industries

Formerly "COTTON"

JUNE 1960 VOL. 124, NO. 6

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TEXTILE INDUSTRIES is published monthly, with an extra issue in September, by W. R. C. Smith Publishing Company. William J. Rooke, chairman of the board; Richard P. Smith, president and treasurer.

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Indexed in "Applied Science & Technology Index."
Executive, Editorial, Subscription, and Advertising Offices are located at 806 Peachtree St., N. E., Atlanta 8, Georgia.

Subscription Rates: United States and Possessions, $2.00 for one year; Canada, South America, Central America, $5.00 a year; Foreign Countries, $10.00 a year.
PUBLICATION OFFICE: 116 E. Crawford St., Dalton, Ga. Second-class postage paid at Dalton, Ga., and at additional mailing offices.
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*means "Freedom"**

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Other advantages of fibers spun from VITEL:

*Superior resistance to abrasion and pilling
*Exceptional yarn strength—good fiber to fiber cohesion
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*Easy processability on standard milling systems

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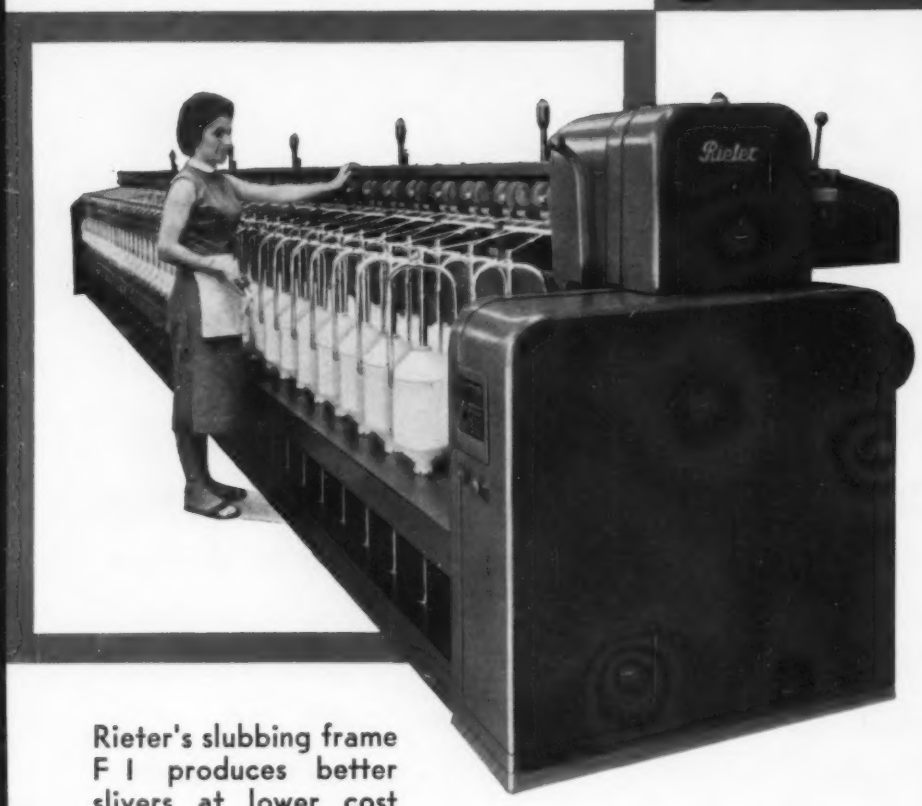
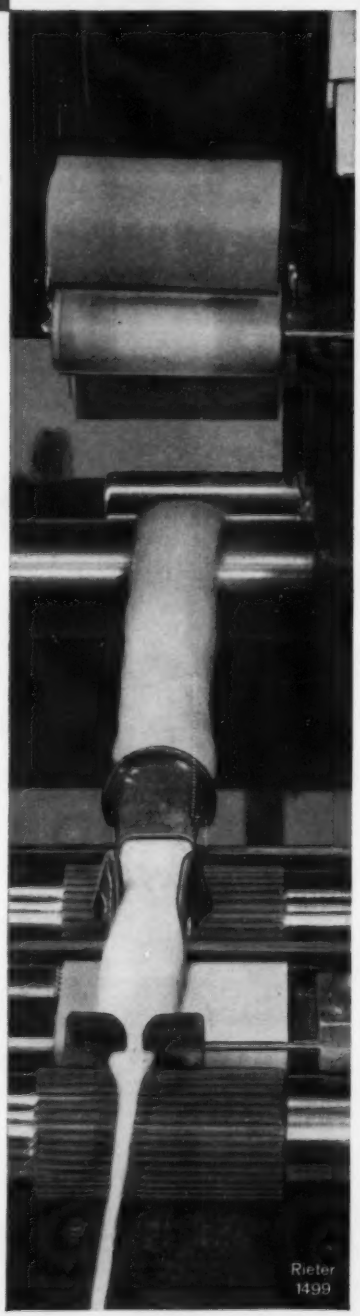
Rieter's slubbing frame



Rieter's slubbing frame F I produces better slivers at lower cost



Rieter

On Rieter's slubbing frame F I with feed cans of up to 18", large bobbins of up to 14" x 7", and up to about 6 lbs. net weight can be produced. The driven lifter rolls ensure a controlled positive sliver feed without faulty drafting. The double-apron drafting arrangement enables increased drafts, and the quality of the roving is enhanced considerably. The new flyers with special off-set drop leg pressers permit very high spindle speeds. Special attention should be given to the mechanisms that practically eliminate count variation: (a) between front and back lines, and (b) from empty to full bobbin.

Rieter Machine Works Ltd., Winterthur/Switzerland

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*U.S. Patents 2,740,689 and 2,820,690

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No. 61 – Knit Goods Bleaching Range.

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MORE THAN 3½ MILLION SPINDLES NOW EQUIPPED WITH ROBERTS HIGH DRAFT

ROBERTS SPINNING NEWS

PUBLISHED BY ROBERTS COMPANY SANFORD, NORTH CAROLINA

SANFORD, NORTH CAROLINA, U. S. A. 1960

Roberts enters new textile machinery field

Adds Worsted Preparatory Equipment to Line of Spinning Frames

Roberts-Tematex ParaBlender with individual ball delivery.

Three new worsted system preparatory machines of latest design and technological improvement — ParaDrafters, AutoEveners, and ParaBlenders —have been added to the Roberts Company line under the name Roberts-Tematex.

They are used in yarn spinning mills as well as in combing and top making plants to pin, parallelize, draft, and blend worsted and other long staple fibers in operations that precede roving and spinning.

Roberts-Tematex machines are considerably more rugged than other machines which are available, hold their settings well and provide high production performance.

The *ParaDrafter* parallelizes and drafts the fibers and can be combined with the *AutoEvener* which automatically evens the weight of the delivered sliver through electronic and mechanical means to within ±1%, from an entering weight variation of up to ±20%.

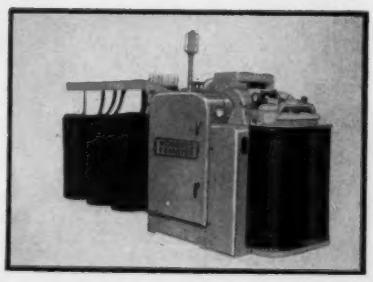
ParaBlenders also parallelize and draft but in combination with a blending operation that provides many doublings and sandwich blends the fibers.

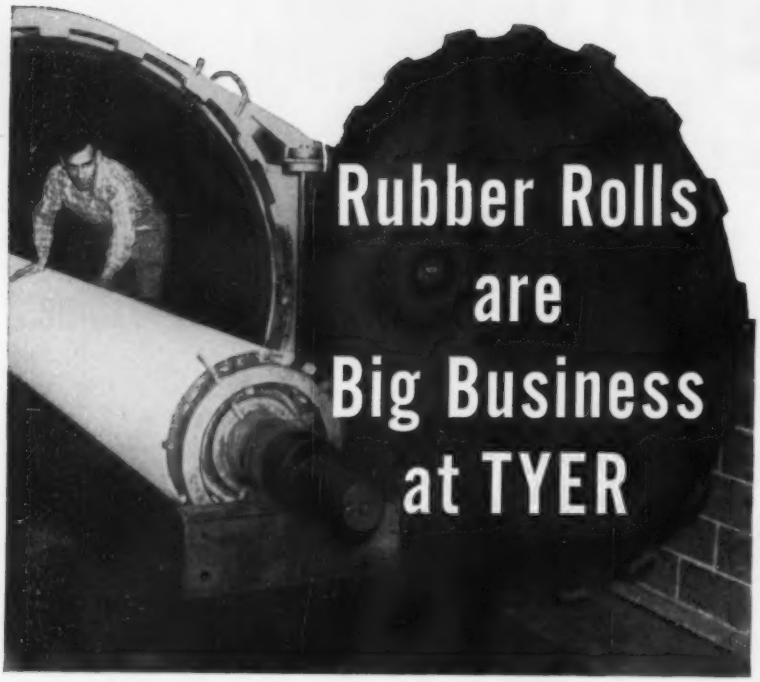
ROBERTS-TEMATEX PARADRAFTER • 8″ wide pinning field, 88 fallers per head, flat pins • Three thread faller screws • Fallers .238″ thick, pitch .354″, 1200 drops per minute • Entering sliver up to 3500 grains per yard • Draft ratios 5 to 15 • Net production delivery up to 270 pounds per hour • Creels for up to 12 cans or balls or combination of cans and balls • Delivery to cans 15″ x 36″ up to 24″ x 48″ • Delivery to balls up to 24″ diameter x 18″ wide (26 pounds) • Hydraulic weighting of the delivery rolls • Hydraulic lifting of head for inspection • Shock absorbers for faller drops • Gradual introduction of fallers into sliver • Automatic stop motions with indicator board to show location of stoppage • Central lubrication • Simple changing of draft and pressures • Static eliminator • With single, bicoil, dual or quad delivery

ROBERTS-TEMATEX AUTOEVENER • Automatic and instantaneous correction of sliver weight • Corrects entering sliver with plus or minus 20% variation • Corrects delivered sliver weight to plus or minus 1% • Mechanical-electrical operation of the measuring, delay and variation units • Fitted only to single head, single delivery ParaDrafter • All ParaDrafter technical details apply

ROBERTS-TEMATEX PARABLENDER • All ParaDrafter technical details as above apply • Melange blending of a high number of slivers • Net Production 400 to 500 pounds per hour • Combines two ParaDrafter heads • Individual ball delivery for each head so machine can be used as two parallel ParaDrafters • Arrangement for combining and sandwich blending finished slivers onto a center ball delivery • Pressure spray oiling for center ball

PARADRAFTER arranged for can feed and dual delivery.





Tyer's expanded facilities for covering rubber rolls include the huge new vulcanizer shown above. 37 feet long, it has an inside diameter of 7 feet. Tyer grinders now accommodate rolls up to 60 inches in diameter and 366 inch face.

Tyer roll fabrication ranges in scope from tiny 1-ounce envelope rolls to giant suction press rolls used by paper mills. Hundreds of different compounds have been developed for our customers to take care of the functions to be performed by each individual roll.

In more than 30 years of roll manufacturing, Tyer has found the answer to many difficult rubber roll problems. Chances are, we can solve *your* problems, too. Write today for free brochure or a visit from a Tyer sales engineer.

TYER *Rubber Company*

ANDOVER, MASSACHUSETTS, U. S. A.

SHORTS & REMNANTS

A Fish Story, But True

Since most everyone is interested in fish stories, let's start out this month with some fish—and these are for real:

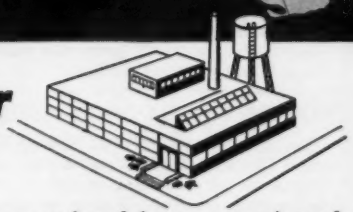
These are the prize winners in a fishing contest held during the recent annual meeting of the National Association of Hosiery Manufacturers at Bal Harbour, Fla. First prize winner was **William Forsten,** S & F Hosiery Mill, Inc., Dayton, Tenn. (front right), who captured the prize with the 7′ 3½″, 51½-lb sailfish he's holding. Second prize went to **Mrs. W. K. Mauney, Jr.,** for her 7′, 50-lb sailfish. That's Mr. Mauney, of Mauney Hosiery Mills, Kings Mountin, N. C., behind her. The other two gentlemen are crew members (they didn't win any prizes).

Department of Unusual Uses for Textiles

Southern Pacific Railroad detectives recently followed a long extension cord into an idle boxcar. They found a hobo peacefully snoozing under an electric blanket.

►Interesting signs seen during recent travels: In Mexico City—a restaurant called "Kofe Breik;" in New

brought to your door



Now you can have scale, rust, grease and other objectionable deposits removed from your boilers, condensers and other heat exchange equipment. An Anderson Chemical Company mobile cleaning unit will come to your plant, anywhere in the Southeast, and remove those unwanted deposits. The special equipment and technical knowledge required are brought to you at a time when your equipment can be out of service for 24 hours without hampering production.

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But the Anderson service doesn't stop there . . . one of their trained service representatives will help you *keep it clean* by outlining a simple preventative maintenance program.

For complete details and an analysis of your water treatment problems, write today. There is no obligation.

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Anderson Chemical Company, INC.

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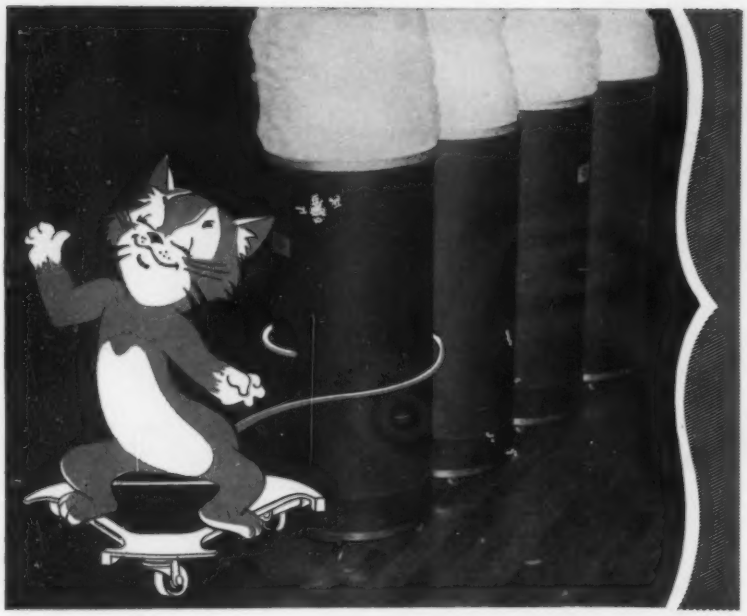


SOUTHERN STATES LARGE COILERS AVAILABLE WITH NEW ALLEY-SKAT TO SPEED DOFFING AND CONVEYING

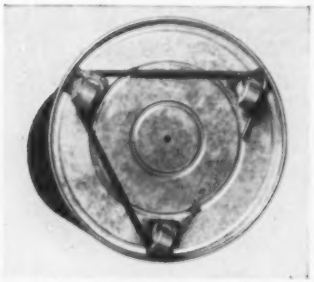
Large-size Southern States Coilers are now available with ALLEY-SKAT, the simplest, most economical can conveyor system ever developed. The problem of doffing and moving heavier cans may now be solved with a low capital outlay.

For example, suppose you are equipping your mill with large Southern States Coilers: if you decide to employ ALLEY-SKATS, you can specify that special cantable adapter plates be included at no extra cost. The only additional charge is for the can latches and ALLEY-SKAT dollies, which are available at nominal cost.

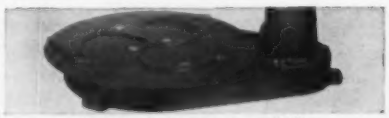
The latches and dollies are easily and quickly installed on any standard can.

The ALLEY-SKAT is strictly optional equipment. However, if you are concerned with handling large cans, as most mill men are, we suggest that you investigate the ALLEY-SKAT.

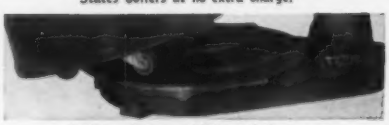
Get full information from your Southern States representative or write for Bulletin 501.



ALLEY-SKAT Dolly mounts to inside of can rim. Dollies are made of finest materials, including heavy-duty mill-type casters.



Cantable adapter plate is available as standard equipment on Southern States Coilers at no extra charge.



Doffing of large, tightly packed cans is quickly and easily accomplished. No lifting required.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

SHORTS & REMNANTS

(from page 10)

York—a men's shop that calls itself "Poise 'n Ivy;" in a Houston furniture store window—"Use our easy payment plan—100% down and then nothing else to pay."

TI Index on Hit Parade

Requests for copies of the index to TEXTILE INDUSTRIES for 1959 continue to pour in from all over the world: **Manfred Schmidt,** Abbeville (S. C.) Mills Corp.; **Alex Lejnieks,** foreman, The Hamilton (Ont.) Cotton Co., Ltd.; **G. Krishnamoorthy,** mgr., Gitanjali Mills Ltd., Madras, India; **Joseph B. McGinnis,** Greenwood Mills, Inc., NYC; **J. U. Steiger,** mgr., cotton mills, Jas. Williamson & Son, Ltd., Lancaster, England; **John B. Baity,** pres., Softspun Knitting Mills, Inc., Henderson, N. C.; **Oscar Uribe G.,** chief of planning, Cia. Colombiana de Tejidos, Medellin, Colombia; **A. B. Lee,** overseer, West Point Mfg. Co., Columbus, Ga.; **William R. Irvin,** methods engineer, Davies Coop (South Australia) Ltd., Kilkenny, South Australia; **C. J. Schollenberger,** dir. of training, Dan River Mills, Inc., Danville, Va.; Israel Institute of Productivity, Tel-Aviv, Israel; **Edwina Charles,** Cone Mills Laboratory, Greensboro, N.C.; sec., Pakistan Central Cotton Committee, Karachi, Pakistan; **Gomes Johan,** chief of documentation, Belgisch Textielinstituut, Gent, Belgium; **R. W. Simpson,** chemist, Janesville (Wis.) Cotton Mills; **Frances M. Bell,** Felt and Textiles of Australia Ltd., Melbourne, Australia; **M. E. Young,** J. P. Stevens & Co., Inc., Garfield, N.J.; and information officer, British Jute Trade Research Association, Dundee, Scotland. We have a few copies left; if you'd like one, drop us a line, or use the reply card on page 179.

Likes Tips for Weavers

"We are interested in up to 40 copies of your reprint booklet entitled '101 Ways to Weave Better Cloth'."

C. T. REED
Plant Manager
Aragon (Ga.) Mills

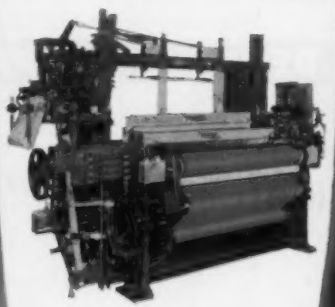
This 64-page book, taken from the pages of our "How Others Manage" department, is available with a subscription to TEXTILE INDUSTRIES.

Wants Yarn Splicer

"Contributor No. 1212 in the April issue of TEXTILE INDUSTRIES mentions in his article a splicing machine for ply yarns, which is now in commercial production. This machine, it is

Continued on page 22

Stehedco Flat Steel Heddles
THE STANDARD OF QUALITY



Ever since flat steel heddles were first introduced to American Textile Mills by Steel Heddle Manufacturing Company, the highest standards of Quality Control have been maintained, and the latest developments and improvements have been introduced first by Stehedco.

Stehedco Engineers are constantly working on improvements in design and construction so that you, the producers of fine fabrics, can have more efficient and better quality production, and greater profits.

Made from the finest quality material, by experienced craftsmen who take justifiable pride in their work, Stehedco flat steel heddles are finished to perfection for smooth performance.

The fact that most mills are equipped with Stehedco heddles proves their well earned popularity. Their reputation for giving longer, trouble-free service, and producing better quality fabrics, is the reason for their great popularity. It is a well known fact that Stehedco heddles are really less expensive in the long run.

Every popular type heddle is available to suit any application, to handle the most delicate yarns, or the heaviest. Ask to have one of our qualified Sales Engineers show how YOU can benefit by equipping your looms with Stehedco heddles.

Be sure you have the best heddles for your particular application; be sure you have STEHEDCO heddles.

(Illustration of C-7 Loom courtesy of Crompton & Knowles Corporation.)

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N.C.
Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

H-6002

TC
TENNESSEE CORPORATION

LIQUID SULFUR DIOXIDE

For Removal of
RESIDUAL CHLORINE

A most efficient and economical antichlor—Removes residual chlorine and other materials which cause color reversion or yellowing with age—TC Liquid Sulfur Dioxide also eliminates excessive residual chlorine in water—a product of highest purity.

Available in:
CYLINDERS
TON DRUMS
TANK TRUCKS
TANK CARS

We would like to discuss with you the possibilities of this versatile chemical in your processing.

For more information see our inserts—
Chemical Week Buyers Guide Pages 173-176
Chemical Materials Catalog Pages 551-554

TC TENNESSEE CORPORATION
612-629 Grant Building, Atlanta 3, Georgia

KEEP MACHINES RUNNING
...reduce maintenance costs,

with DEUBLIN ROTATING UNIONS

¾" Size Union Illustrated

for water, steam and air service!

Here is a compact, efficient rotating union—

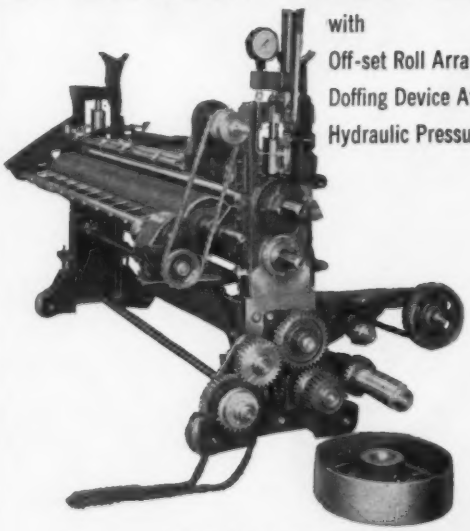
- ★ LEAKPROOF
- ★ CORROSION PROOF
- ★ EASY TO SERVICE
- ★ VIRTUALLY FRICTIONLESS
- ★ PRECISION BUILT FOR LONGER LIFE
- ★ INTERCHANGEABLE with any other rotating union
- ★ VERSATILE—For Monoflow or Duoflow operation, available in ½", ¾", 1", 1¼" and 1½" sizes
- ★ MINIMUM TORQUE makes it ideal for high speed applications

See how this dependable, new rotating joint can reduce inventory of replacement parts because of Deublin's standardization of sizes. Keep "shut downs" from wrecking your production schedules. Pays for itself many times over.

Write today for full details and prices.

DEUBLIN COMPANY
1931 Stanley St., Northbrook Ill.

NEW "LIGHTWEIGHT" PERALTA® MACHINE

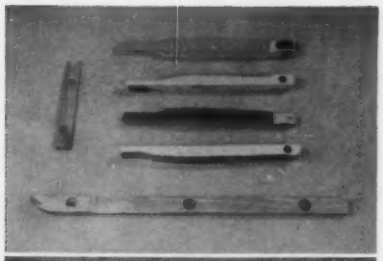


with
Off-set Roll Arrangement
Doffing Device Attachment
Hydraulic Pressure

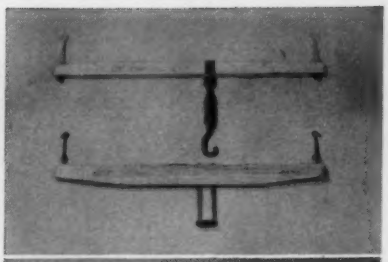
Write for information.

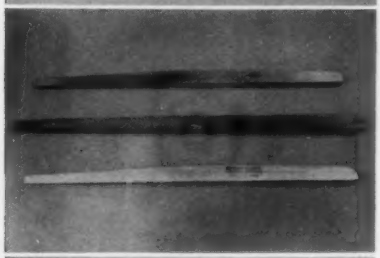
DB

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P.O. Box 25



GOOD WOOD!





Check your inventory on wooden parts:

Adapters & Cones

Battery Discs

Binders & Loom Swells

Clearer Boards & Rolls

Dobby Chain Cylinders

Harness & Dobby Sheaves

Jack Sticks & Parts

Lays & Lay Parts

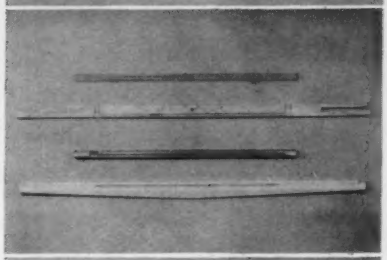
Handrails & Reed Caps

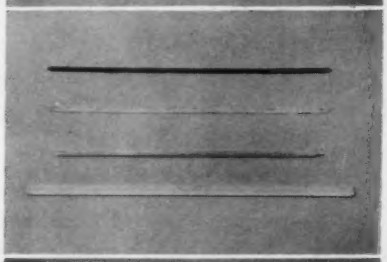
Leece Rods & Warp Clamps

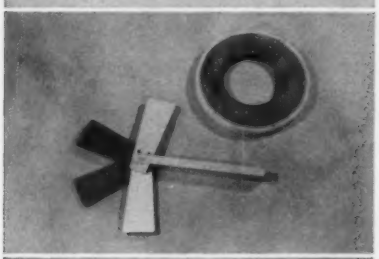
Loom Flags

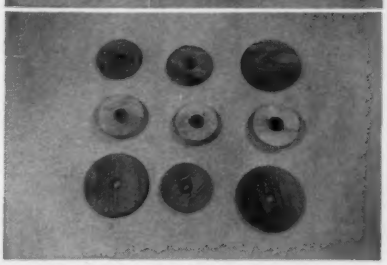
Lug Hold-ups, Blocks & Straps

Pickersticks





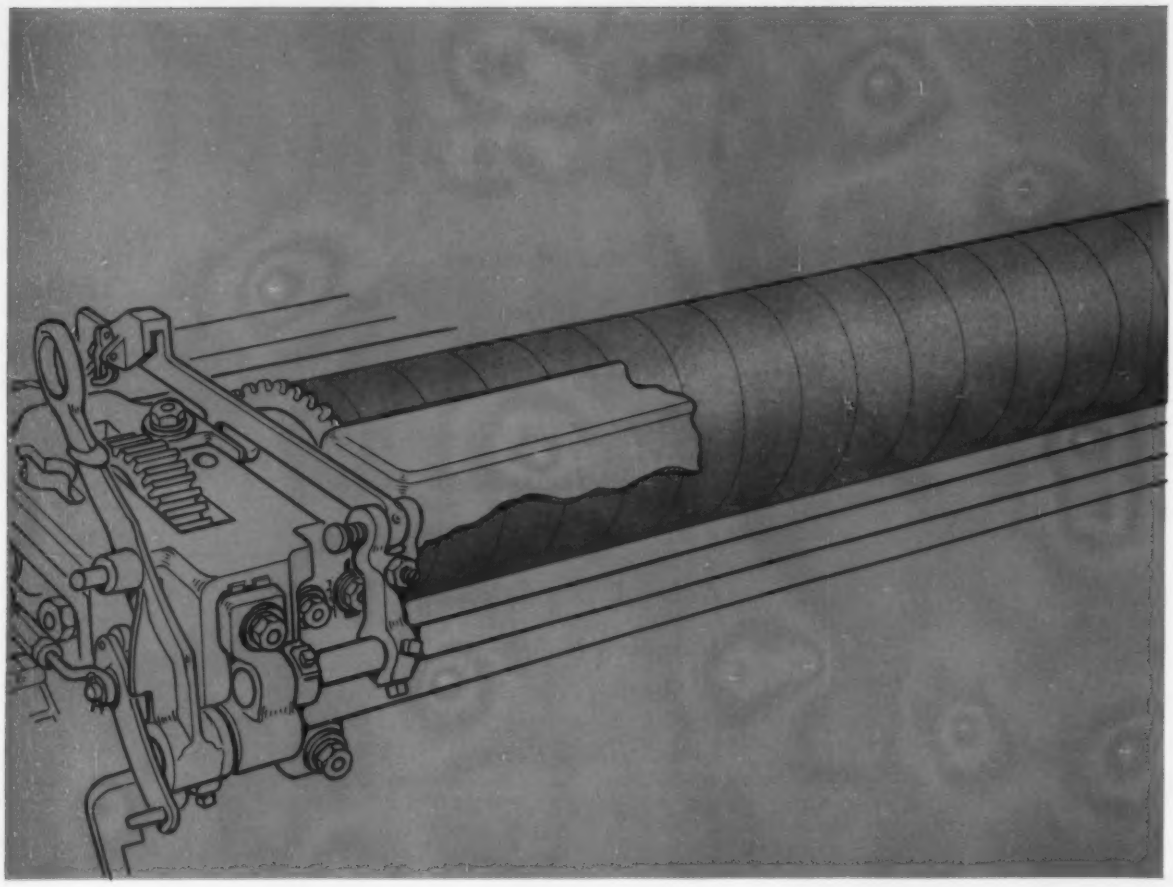




CHECK BATSON for good wood parts. Let us prove to you that our fine quality woods, excellent workmanship, prompt delivery make Batson your best source for wooden parts. Phone Greenville CEdar 2-7691 and take the woe out of your woods.

P.O. Box 772
Greenville, S.C.

Louis P. Batson Company



Get twice the holding power with this loom take-up roll cover

A special high-friction synthetic rubber gives Armstrong NO-732 Take-Up Roll Covering as much as twice the holding power of conventional rubber materials. As a result, NO-732 maintains a firm, steady grip on any fabric . . . even on hard-to-hold high-count synthetics.

Many mills have found that fabric defects caused by uneven take-up tension can be minimized . . . or eliminated . . . by using Armstrong NO-732 Covering.

This unusual covering is available with either a finely creped surface or in a new gridded design. Both have the high friction necessary to good performance on your looms. A sturdy cloth backing adds extra strength to NO-732 and helps to provide good adhesion to the roll.

For more information and test samples of Accotex NO-732 loom take-up roll cover, see or call your Armstrong man. Or write Armstrong Cork Company, Industrial Division, 6906 Ivy Street, Lancaster, Pennsylvania. All Armstrong textile supplies are available for export.

Armstrong LOOM SUPPLIES

1860–1960 Beginning our second century of progress

A NEW IDEA IN PACKAGING

FROM AMERICAN VISCOSE CORPORATION

AVISTRAP*

CORD STRAPPING

*Trademark of American Viscose Corporation. Patents pending.

SUPER STRENGTH

AVISTRAP cord strapping is a radically new strapping material manufactured from super strength Avisco® rayon. AVISTRAP has ample strength for many applications which now require steel strapping . . . is many times stronger than reinforced tapes . . . actually outperforms steel in extensibility and impact resistance.

INITIAL COSTS

SHIPPING COST

COST PER PACKAGE

ECONOMY

AVISTRAP cord strapping costs you more than per dollar than steel strapping, greatly reduces shipping costs since it weighs from 1/7 to ¼ as much as steel strapping of comparable width. AVISTRAP costs far less than reinforced tapes of comparable strength. You pay less initial cost, invest far less per package.

REDUCES DAMAGE

AVISTRAP cord strapping is highly flexible, tightens around corners without cutting. When properly tensioned, AVISTRAP cannot harm merchandise. And AVISTRAP will not rust.

*Trademark of American Viscose Corporation. Patents pending.

FAST, EASY HANDLING

AVISTRAP cord strapping coils weigh approximately 21 lbs., complete with disposable spool (yardage equal to 100 lb. coil of steel strap). Coils can be changed in seconds. Just throw away the empty spool, put the new AVISTRAP coil in place. No unwrapping, no complicated changing of reels.

SAFETY

AVISTRAP cord strapping has no sharp edges, cannot cut hands or otherwise injure personnel. When over-tensioned, AVISTRAP does not lash out with jagged ends. And there is no disposal hazard with AVISTRAP. It is easy to handle, and can be burned.

advantages entirely new in industrial packaging ...tested and proved by industry

Extensive testing in actual industrial [illegible] AVISTRAP cord strapping deliv[illegible] safety, and many more ma[illegible] pers. Just a few, in a[illegible]:

Because AVISTR[illegible] and cannot [illegible] ized steel [illegible]

AVIS[illegible] by consignee, by [illegible] methods.

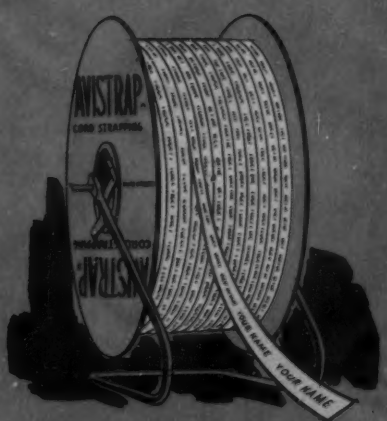
Lo[illegible] disposable spool means less do[illegible] packaging lines with AVISTRAP.

AVIS[illegible] little storage space. A 1,000-yd. spoo[illegible] AVISTRAP measures 13½" in diameter, is only [illegible]" wide, and weighs only 21 lbs.

AVISTRAP is shipped on pallets made up of easy-to-handle packages . . . single-coil or four-coil cartons.

AVISTRAP is a stronger replacement for many reinforced filament tapes, at lower cost.

For more information on AVISTRAP, tools, seals, and accessories see next page. ▶



LOW COST IMPRINTING

It costs less to imprint AVISTRAP cord strapping with your trademark or company name than to imprint steel strap. Compared with printed reinforced filament tapes, AVISTRAP shows even greater economy. Some advantages of imprinting: promotional value, quick identification of otherwise plain-looking packages, reduced pilferage.

test AVISTRAP cord strapping in your plant

All AVISTRAP cord strapping distributors are equipped to give in-plant demonstrations of AVISTRAP strapping. If you would like to make a comparison of AVISTRAP and the materials and methods you are now using, contact AVISTRAP Department, AMERICAN VISCOSE CORPORATION, for the name of the distributor nearest you.

To request more information or a sample of * AVISTRAP cord strapping, use this coupon.

Name_____

Title_____

Company_____

Address_____

City_____ State_____

(Use business letterhead for official request)

☐ Please send me a sample of AVISTRAP cord strapping sample.

☐ Please send application information, prices for AVISTRAP cord strapping and name of local distributor.

☐ Please contact me to make arrangements for a demonstration of AVISTRAP cord strapping in my plant.

Fast and Dependable Local Service Completes the Picture

Users of AVISTRAP cord strapping will be served by well-stocked local distributors. Immediate delivery, fast tool service and prompt access to men experienced in handling and application of AVISTRAP strapping are already available in major industrial areas. Get the name of the AVISTRAP cord strapping distributor nearest you from AVISTRAP Department, American Viscose Corporation, 1617 Pennsylvania Boulevard, Philadelphia 3, Pa.

AVISTRAP*

CORD STRAPPING TOOLS

SEALS • ACCESSORIES

AVISTRAP
CORD STRAPPING SIZES

Type	Nominal width
20	¼"
30	⅜"
40	½"
50	⅝"
60	¾"

In addition to AVISTRAP cord strapping in all sizes, distributor stocks include the full range of AVISTRAP tools . . . a wide selection of accessories, tensioners and sealers for various strapping methods and procedures. Distributors also furnish facilities for fast tool repair.

AVISTRAP*

CORD STRAPPING

To request more information or a sample of AVISTRAP cord strapping, fill in reverse side of this coupon and mail to:

AVISTRAP Cord Strapping
AMERICAN VISCOSE CORPORATION
1617 Pennsylvania Boulevard
Philadelphia 3, Pa.

*Trademark of American Viscose Corporation. Patents pending.

AVISTRAP cord strapping is a new product of AMERICAN VISCOSE CORPORATION, makers of rayon, acetate, cellophane, plastics.

PRINTED IN U.S.A.

Eastman now offers textile finishers 3 basic types of polyethylene

New EPOLENE resins enable textile chemists to formulate broader range of softeners

The wide range of properties now available in Eastman's Epolene series provides greater flexibility in formulating polyethylene emulsions for softening "wash and wear" cottons and synthetics, and for textile lubricants and sizes.

Permanent, low in color, non-chlorine retentive and easy to prepare, emulsions based on Epolene polyethylene give you a practical and economical method for improving the hand, abrasion resistance and tear resistance of "wash and wear" treated fabrics.

With Epolene, you can prepare any kind of emulsion system, cationic, anionic or non-ionic, with solids contents of up to 40%.

Choose from three different low-molecular-weight resins to obtain the right emulsion properties and finishing characteristics for your equipment and service.

Epolene E is the highest-molecular-weight resin of the three. It produces stable, low-color emulsion systems of superior quality for use in softening cottons or synthetics, or as a lubricant to reduce needle-cutting and increase sewability. Like other Epolene resins, it needs no curing, lasts through repeated launderings and resists dirt pick-up and redeposition.

Epolene LVE, a new resin type, has a lower melt viscosity than has Epolene E, thus offering somewhat better handling characteristics. Epolene LVE is softer than other resins in the series. The stability of its emulsions in the presence of resin catalysts is outstanding, especially at the low end of the pH scale, as indicated by its relatively high HLB factor.

Epolene HDE is the first high-density, emulsifiable low-molecular-weight polyethylene on the market. Because it is much harder, it improves significantly the abrasion resistance and tear resistance in cotton and cotton blends. Its stability and permanence are excellent. It, too, offers easier handling characteristics during emulsion preparation because of its low melt viscosity.

If you are formulating polyethylene softeners and would like to produce stable, economical emulsion systems of superior all-'round characteristics, look to Epolene from Eastman. Let us introduce you, also, to new time-saving and cost-cutting emulsifying techniques developed at our textile laboratories. For more information on the formulating and performance advantages of these superior polyethylene resins or for specific formulating assistance, write your nearest Eastman office. We invite your inquiry.

Property	Epolene E	Epolene LVE	Epolene HDE
Molecular Weight	2500	1500	1500
Density	0.938	0.939	0.956
Ring and Ball Softening Point, °C. (ASTM D-36-26)	104-108	104-105	110-111
Penetration Hardness (100 g./5 sec./77°F., tenths of mm.)	2	5	1
Color (liquid), Gardner scale, max.	2	2	2
Brookfield Viscosity (cps. @ 120°C.)	1500	400	455

Epolene

EASTMAN low-molecular-weight polyethylene resins

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Detroit; Framingham, Massachusetts; Greensboro, North Carolina; Houston; New York; Philadelphia; St. Louis. **West Coast: Wilson and Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

WHEN YOU
STEP-UP
IN SIZE
BE SURE
OF YOUR
BOBBINS

Next time buy Lestershire

When you move in to challenge the industry with bigger packages, higher speeds, longer runs . . . move in with bobbin quality that will back you up with the efficiency and economy you're aiming for.

Take this typical Lestershire large package "twister"; strong, high density, light-weight heads of Vulcanized Fibre reduce bobbin weight, lower the power factor, take the roughest plant use and abuse.

Or, check the precision finish of this 12" Hard Rock Maple Barrel. It's free of knots, is carefully machined to insure dynamic balance.

Plus, exclusive Lestershire anchor screw construction for the tightest head to barrel joint in the industry, brass bushings or aluminum steel center tubes for accurate spindle mounting. Lestershire's ambitious system of quality control check points, through every manufacturing step, insures quality consistency in every bobbin you buy.

Write for complete Lestershire Bobbin Catalog. Address Dept. W-6.

LESTERSHIRE SPOOL DIVISION

NATIONAL VULCANIZED FIBRE CO.

WILMINGTON 99, DEL. • *Plant:* 140 Baldwin St., Johnson City, N.Y. • *In the south:* Odell Mill Supply Co., Greensboro, N. C.; Greenville Textile Supply Co., Greenville, S. C.

SHORTS & REMNANTS

(from page 12)

stated, is available in 25-head units and single-head units. I would appreciate information concerning the manufacturer of this machine."

SAM R. MAY
V-P and supt.
China Grove (N. C.) Cotton Mills

The machine is made by Joseph Stubbs Ltd., Mill Street Works, Ancoats, Manchester 4, England.

50 Years Ago

Quotes from TI for June, 1910:

"In the year 1909, the South added 932,320 spindles and 19,237 looms calling for an investment of over $23,000,000." Quoth the raven . . .!

"Virtually the only serious handicap to cotton manufacturing in the South is the labor question. . . The increased profitableness of agriculture has tended to draw men from industrial pursuits back to the farm . . . " But that was before parity and the Soil Bank.

TI reported on the 14th annual convention of the American Cotton Manufacturers' Association, held the month before in Charlotte, and summarized some remarks made by **A. H. Lowe,** treasurer of Parkhill Mfg. Co., Fitchburg, Mass.: " . . . He made the point that cotton at 15 cents [!] was the worst baled material of any other commodity known of equal value. He stated that paper worth two cents a pound was boxed as carefully as the finished goods from the cotton mills, and that he wished that the manufacturer had the influence to show the farmers the advantage of proper baling." Well, after 50 years he still doesn't have the "influence."

Speaking of the ACMA convention, members and guests had a high old time after the business sessions: "Many of the members attended the baseball game in the afternoon, and in the evening some attended a wrestling match, and others visited the auditorium to see the commencement exercises of the city graded schools."

"S. B. Tanner, president and treasurer of Henrietta Mills and Florence Mills, Henrietta, N. C., favors the formation of suborganizations so that there will be some plans by which mills making similar goods can be brought together . . . and when their particular line of goods becomes depressed . . . they can easily agree upon a period of curtailment . . ." Mr. Tanner obviously hadn't yet met Mr. Sherman.

TI also reported on the 6th annual

FIRESTONE LATEX BUILDS A STIFFER HAND INTO CARPETS AND FOAM

A Firestone product-specialized FR-S® latex lends a hand to carpet backing, makes carpets stronger, longer lasting, more attractive and provides greater dimensional stability. This same versatile latex gives foam carpet backing extra stiffness per unit of weight as well as greater tear strength. It's Firestone FR-S 174, a styrene-butadiene resin latex. Put it to work for you by calling your latex compounder or a Firestone Technical Service Man. Write Firestone Synthetic Rubber & Latex Co., Dept. 58-5, Akron 1, Ohio.

Copyright 1960, The Firestone Tire & Rubber Co., Akron, Ohio

Firestone

SYNTHETIC RUBBER & LATEX CO.

AKRON 1, OHIO

MAKING THE BEST TODAY STILL BETTER TOMORROW

For Micronaire testing . . .

IMPROVED...

Faster-weighing, easier-reading
SHADOGRAPH® Scales

A new optical system, developed by The Exact Weight Scale Company, provides the Shadograph with greater-than-ever visible accuracy. Its shadow-edge indication is sharper, easier to read, and contributes to faster operation.

Model 4104-A, above, is specially designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Dial is graduated with 1 inch of indicator travel equal to 15 grains, over and under.

Extreme accuracy, plus greater speed and easy-to-read indication make Shadograph the choice of cotton shippers, brokers and mill operators both here and abroad. The Shadograph is another precision product of Exact Weight, leading manufacturer of job-engineered scales for more than 45 years.

Model 103 Exact Weight Scale for control of cone and spool weight.

Model 4142 Shadograph for determining yarn count number. Direct-reading eliminates use of conversion tables.

Shadographs are available for color control, slashing, sliver test, denier test and check-weighing operations.

WRITE FOR BULLETIN 3328

Exact Weight SCALES

THE EXACT WEIGHT SCALE CO.
922 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: 5 Six Points Road, Toronto 18, Ont.

Sales and Service Coast to Coast

Find us in your local 'Yellow Pages'

BETTER QUALITY CONTROL . . . BETTER COST CONTROL

SHORTS & REMNANTS

(from page 22)

convention of the National Association of Hosiery and Underwear Manufacturers. **Fred W. Simons,** outgoing president, delivered his annual address, and TI said, "This was devoted almost entirely to the discussion of the tariff, in which President Simons brought to task those who would lower the duties on knit goods . . ." Nothing outdated there!

Editor Atkinson also discussed early filter-tip cigarettes: "Machine-made cigarettes [in Russia] frequently contain a bit of cotton wadding in the mouthpiece to hinder the falling out of tobacco, and this also absorbs the tobacco juice to a degree. This is ordinary roving made on slubbing frames from good, clean cotton at any cotton mill." So that was another Russian first, but we haven't heard them make a claim.

First Shovelful Dept. (Cont.)

Here's another photo from our collection of views of unlikely shovel wielders (we gave you a sample last August). This time it's **J. L. Wyman,**

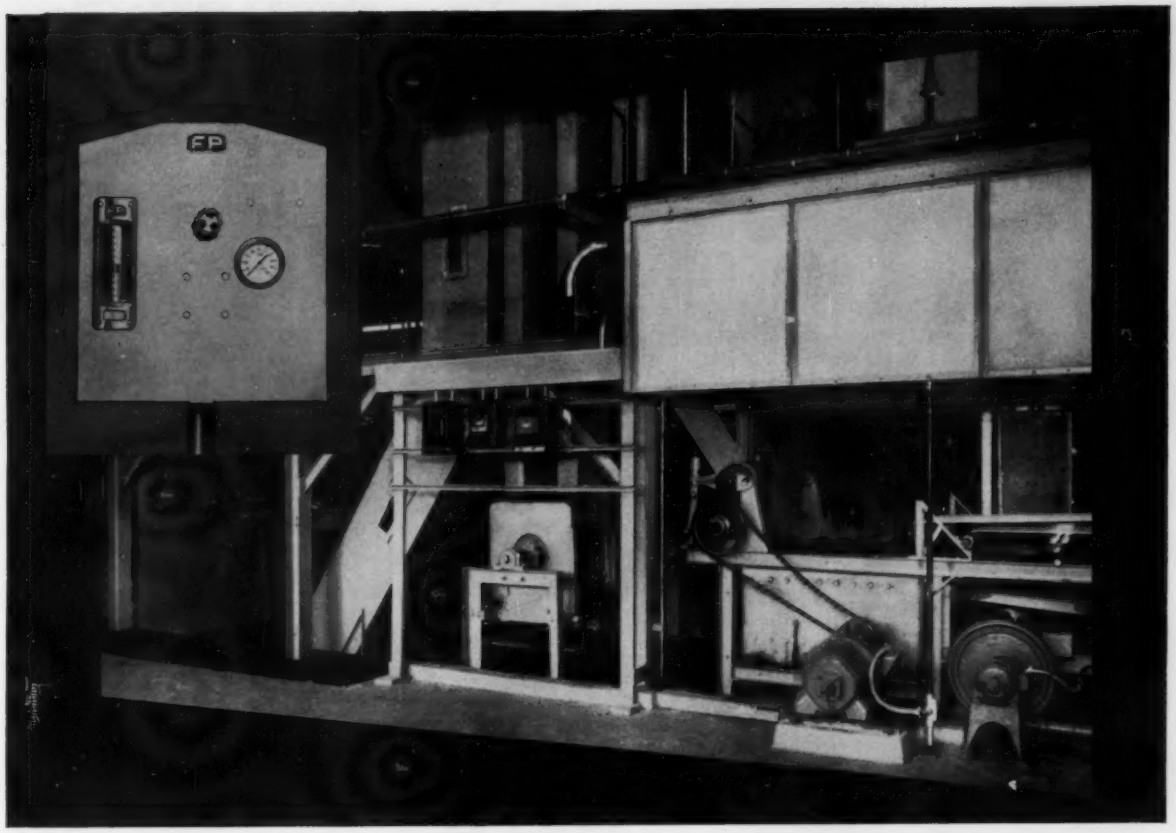
southern sales manager for Putnam Chemical Corp., purporting to be giving a hand in getting construction under way for Putnam's new southern branch at Charlotte, N. C. Well, we hope he didn't hold things up too long.

Loom Gauges

"In your March 1960 issue, page 94, we notice that you will be preparing a book on the series of articles appearing on loom maintenance. Would you please make a note that we are interested in this book and would like you to send this to us when it is in print."

E. Dodson
Readson Limited
Manchester, England

Many other readers have also asked



New bleaching idea from Pennsalt helps cut your chemical costs!

Pennsalt's latest technical service aid to textile finishers is a new, low-cost process* for introducing chlorine gas directly into continuous peroxide bleaching systems. The process adds chlorine to your caustic desizer, caustic saturator, and/or to the washer preceding the peroxide saturator. The result—*substantial chemical savings.*

The Pennsalt chlorination process is simple, yet effective . . . requires no expensive additional finishing equipment . . . no complex testing procedures . . . no additional operators. The simple, inexpensive control equipment pays for itself quickly through reduced chemical costs.

Pennsalt's textile finishing service can help you reduce finishing costs through direct gas chlorination. Let us give you a thorough demonstration in your mill at no charge. Ask your Pennsalt representative for details, or write Industrial Chemicals Division, PENNSALT CHEMICALS CORPORATION, 3 Penn Center, Philadelphia 2, Pa.

To get the most from your finishing operations ask for Pennsalt textile service. Assistance like this is only a part of the complete, personalized technical service available from Pennsalt. And for the most from your chemicals be sure to ask for Pennsalt caustic soda, chlorine, hydrogen peroxide, ammonium chloride, ferric chloride and surfactants.

*Patent applied for

See our complete listing in Chemical Materials Catalog

Industrial Chemicals Division

SALES OFFICES: CHICAGO • DETROIT • NEW YORK • PHILADELPHIA
PITTSBURGH • ST. LOUIS • APPLETON • ATLANTA
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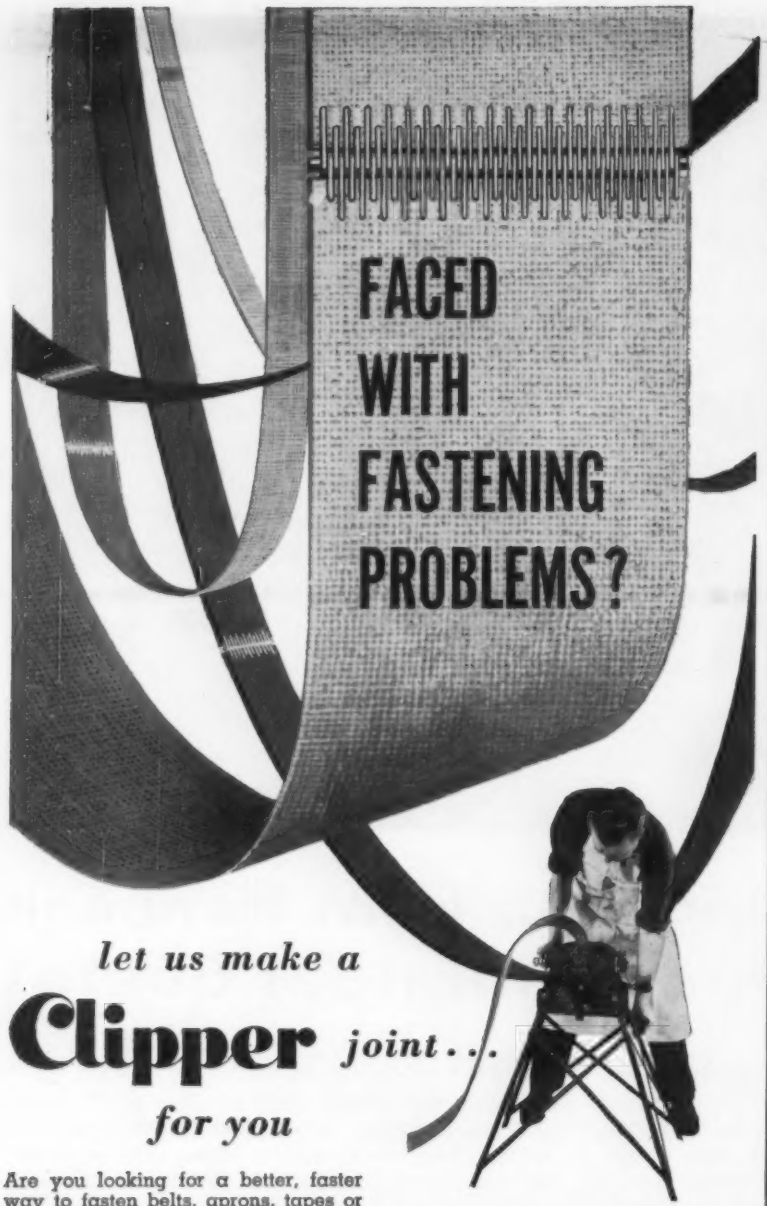
INDUSTRIAL QUÍMICA PENNSALT, MEXICO CITY

Pennsalt Chemicals
ESTABLISHED 1850



let us make a

Clipper *joint . . .*

for you

Are you looking for a better, faster way to fasten belts, aprons, tapes or ribbons? Would you like to slash maintenance time by putting an easy-to-fasten joint in endless belts? The fastest way to join these ends is with Clipper Hooks and Lacers.

Long used for lacing power transmission belting, Clipper fasteners are now proving their cost-cutting value in materials handling equipment, automatic pin setters, laundry equipment, food harvesting and processing equipment and in many other applications.

They produce a smooth, flexible joint in a hurry.

Let us demonstrate the advantages of a Clipper joint on the product of your choice. Send us a small sample (or the complete belt, apron, tape, or what have you) and we'll make you a Clipper joint FREE, without obligation.

Write, wire or call today for details and literature.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W., Grand Rapids 2, Michigan

SHORTS & REMNANTS

(from page 24)

to be notified; we'll be glad to do it.

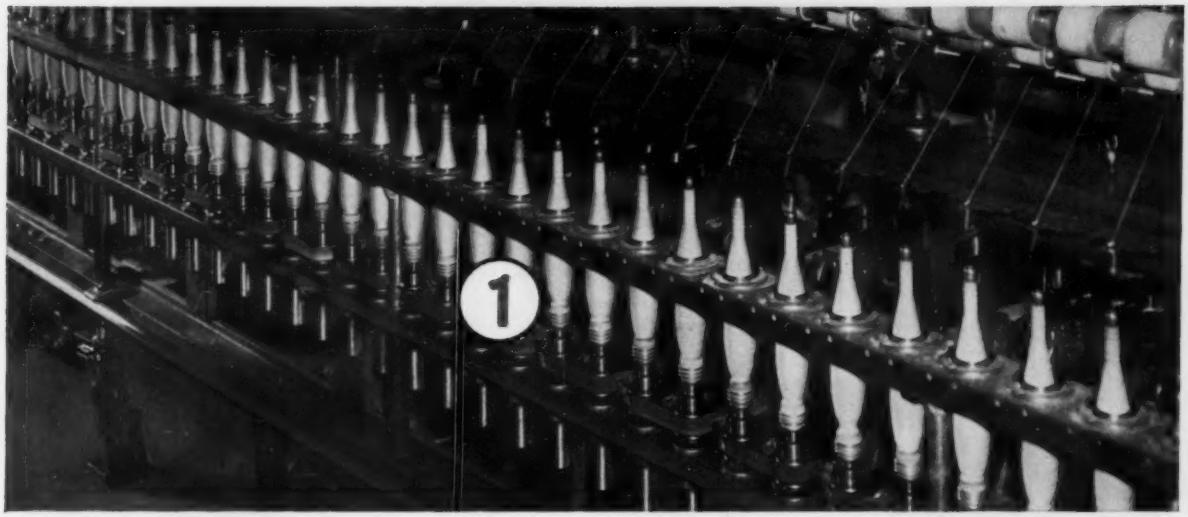
Wash-and-Wear, 1907 Style

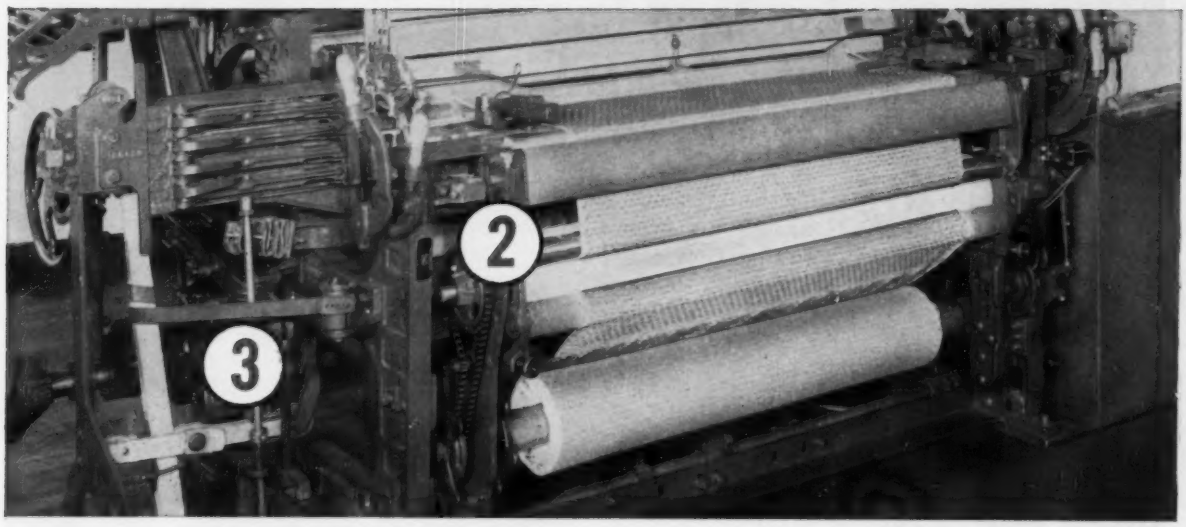
When we first saw this ad from *Youths Companion* for May 7, 1907, we thought it was the earliest known example of a plug for wash-and-wear:

For Washing-
For
Wear
Are you looking for a wash fabric that is really a *wash* goods—one that will bear repeated washing and ironing without losing its original brilliancy of color and finish?
End your search by trying Hydegrade Manchester Galatea. Just count the number of times you wash it; note that no matter how soiled it may have been its beauty is not lost; then you will appreciate why it stands alone as a children's dress goods. The colors are fast. As a fabric for *wear*
Hydegrade
MANCHESTER
GALATEA
has proved a revelation. It stands the roughest service a boy or girl can give it. Superior weave and excellent finish make it desirable also for women's outing suits and shirt waists. Sold at all dry goods stores, 10c a yard; wide range of colors and patterns. Above trade-mark on selvage of every yard. Ask to see
READY-MADE GARMENTS
FOR CHILDREN
—made of Hydegrade Manchester Galatea; neat, dressy, serviceable.
For your protection insist that each piece of the garment bears the above trade-mark label in lavender and white.
If you have difficulty in securing either piece goods or garments, write us and you will be supplied. Send for free samples and booklet.
A. G. HYDE & SONS,
361-363 Broadway, New York City

But it turns out that the dress is wash-iron-wear. Anyway, we think it's interesting as an example of a quaint, long-since-gone way of advertising.

►See you next month, when we'll have a special report on the Atlantic City Show.





ESSO LUBES STAY ON THE JOB

1. Spinesso® spindle oil stays put on bearing surfaces . . . minimizes startup and running friction and dampens vibration. Outstanding oxidation and color stability. Checks corrosion in humid atmospheres. Time-proven Spinesso does a fine job, too, in oil-lubricated twister and spinning rings. For grease-lubricated twister rings, Alert® adhesive white grease is recommended.

2. Nebula® EP multi-purpose grease replaces many greases . . . light to heavy! Excellent for loom gears and bearings. Outstanding in the hot, highly loaded bearings of size, dryer and calender rolls. Lubricates well under wet conditions, as found in mercerizing and scouring range bearings.

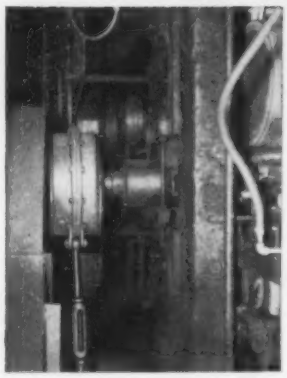
3. Millcot® anti-spatter oils stick well to rapidly moving parts and help keep down oil stains. Anti-wear agent maintains lubrication under heavy pressure and shock loading in looms. Millcot K prevents excessive leakage in older card comb boxes and spur gear cases. Millcot DX doesn't form oil "strings" and is readily scoured from fibers . . . an ideal lube for top roll bearings.

Efficient Esso lubricants save time, labor and machine wear. For more information contact your local Esso office, or write: Esso Standard, Division of Humble Oil & Refining Company, 15 West 51st Street, New York 19, New York.

Esso

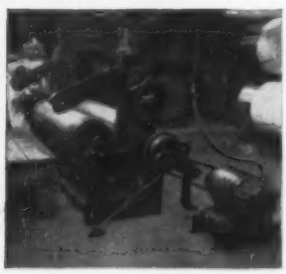
In Industry after Industry . . . "ESSO RESEARCH works wonders with oil"

SAVE SPACE AND REDUCE COSTS . . . . .

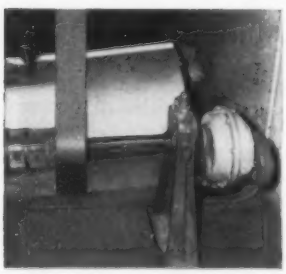


WATER MANGLE AND 20 DRY CANS are driven by 3 Lovejoy single-reduction shaft mounts in this highly compact installation. 10-hp. unit in foreground drives mangle at 4.80:1 ratio, 168 rpm. output speed. One of two 7.5-hp. units driving dry cans at 4.35:1 ratio, 87.5 shaft speed is seen in background.

That's What Mill Operators Say About Lovejoy Shaft Mounted Reducers



SEPARATE MOUNT IS NOT NEEDED, since this Lovejoy double-reduction unit mounts directly on drive shaft and is anchored on tie rod. It drives cloth winder from a 2-hp. dc. motor at 14.5:1 ratio.



KEEPING AISLES OPEN FOR TRAFFIC is critical at this dyehouse wash range. Compact 5-hp. Lovejoy shaft mount was selected to drive cloth winder. Shaft speed is 100 rpm., ratio 14.70:1.

These photographs, taken in typical Southern textile mills, show how Lovejoy Shaft Mounted Gear Reducers are used to achieve compactness, economy, and maintenance savings:

First, they provide a direct drive, eliminating shaft couplings and bulky supporting structures to save money, as well as space. Second, they reduce maintenance, because alignment is not required and belt tensioning is greatly simplified. Third, they are available in a wide range of models to provide the proper speed, horsepower and ratio most efficient for each particular operation—*and they cost less than other shaft mounted gear reducers.*

Lovejoy Shaft Mounted Gear Reducers are available from stock in 18 models—8 to 425 rpm., fractional to 120 hp. and 4.5:1 nominal ratio (single reduction), 14.7:1 nominal ratio (double reduction).

Request Catalog R-58. Give application data for specific recommendations from Lovejoy's engineering staff.

LOVEJOY FLEXIBLE COUPLING CO.

4850 WEST LAKE STREET • CHICAGO 44, ILLINOIS

PERSONAL NOTES

Donald Comer, Jr., president and treasurer of Cowikee Mills, Eufaula, Ala., was recently elected president of the Alabama Textile Manufactur-

Mr. Comer

ers Association. Mr. Comer succeeds **Joel E. Johnson** of Geneva, who was named chairman of the board. Mr. Comer is also executive vice-president of Avondale Mills, and president of Avondale Mills, Inc., selling agent for Avondale Mills. Other officers elected were: vice-president—**Sidney Tingen,** secretary-treasurer of West Boylston Mfg. Co.; treasurer—**W. E. Dunn,** vice-president and general superintendent of Huntsville Mfg. Co. * * * A highlight of the annual meeting of the ATMA was the recognition of **J. Craig Smith,** president-treasurer of Avondale Mills, Sylacauga, who was honored for having been the first textile mill executive to become president of the National Cotton Council. Mr. Smith was presented a plaque inscribed with the words "4 Star Recognition." Mr. Smith is past-president of the American Cotton Manufacturers Institute, Alabama Textile Manufacturers Association, and the Carded Yarn Association.

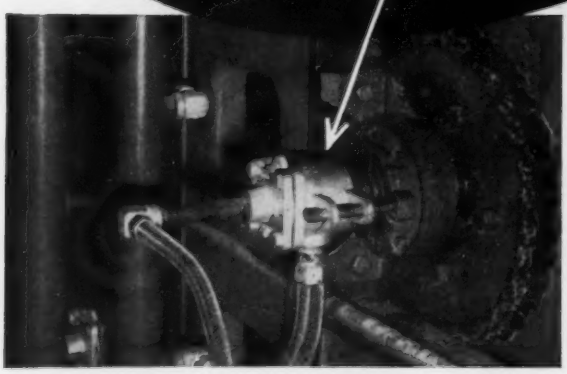
At the Dunean Plant, Greenville, S. C., of J. P. Stevens & Co., Inc., **Harold A. Gibbs** has been promoted to plant superintendent. **J. C. Stevenson** has become superintendent of preparation, and **William H. Gray** has been named general overseer of throwing. * * * **M. L. Morgan,** assistant superintendent of the Republic Plants, Great Falls, S. C., has become superintendent of the Industrial Plant, Rock Hill, S. C., succeeding **M. H. Ramsey,** who has resigned. * * * **James Edgar,** head wool buyer, has

Continued on page 34

Floating Action makes the big difference!

Cross section view of Type LJ Johnson Joint showing support rods, assembly plate, and Johnson syphon elbow. Steam inlet is in side of body — see installation view below.

ROD SUPPORTED (Type LJ) JOHNSON JOINT and JOHNSON SYPHON ELBOW



Rod-supported Johnson Joint installed in southern mill on 23" diameter x 60" face dry cans operating at 100 yards per minute, 35 lbs. steam pressure.

Write for complete information on Type LJ Joints with Syphon Elbows.

This is the Johnson Joint combination that is proving especially suited for dry cans, print cans and 30" cylinder slashers.

The Type L body has lugs cast on it, so it can be hung on simple supporting rods. All the weight of the housing and pipe connections is thus lifted from the rotating assembly of the joint. These rotating parts "float" freely inside — have only their primary task of maintaining a seal. Longer service life and reduced down-time are direct results.

Perfect team mate is the Johnson Syphon Elbow — successor to the old unwieldy, long radius syphon pipes. It opens to pass through the joint, closes of its own weight to a tight seal when in position. The joint is fitted with a special assembly plate to hold internal parts in position when head is removed to insert or remove the syphon pipe.

Most machinery manufacturers now provide bosses on bearing housings which can be utilized for this type of mounting. So that you can try this combination in your own mill we will gladly supply a couple of units for 90-day test, without any obligation.

Products of The Johnson Corporation

815 Wood St., Three Rivers, Mich.

Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

NEW LOW-COST PERMANENT SOFTENER FOR...

Emulsifiable
A-C® Polyethylene

OFFERS SUPERB "HAND" PLUS

- HIGHER ABRASION RESISTANCE
- IMPROVED TEAR STRENGTH
- EXTRA CREASE RESISTANCE
- REDUCED NEEDLE CUTTING

Whatever fabrics you finish, you can benefit from the new textile finishes now being formulated with A-C Polyethylene.

Already widely accepted as a *softener and finishing agent* to impart superb "hand," the new emulsions containing A-C Polyethylene benefit every type of synthetic and natural fiber in some way over other textile finishes. In addition to better "hand," they provide higher abrasion resistance, improved tear strength, extra crease resistance, permanence through multiple cleaning cycles, and better sewability through reduced needle cutting.

In wash-and-wear finishes, for example, A-C Polyethylene overcomes loss of "hand" and tear strength when used along with the thermosetting resins commonly employed in finishing wash-and-wear.

Write today for more information. Why not find out all about this new advance in textile finishing? Your textile chemical supplier either has an A-C Polyethylene finish on hand or can formulate one for your specific needs. Anionic, cationic and nonionic emulsions are available to fit all needs. (We are manufacturers of resins, not finishing emulsions.) Or write to us direct for complete information at the address below.

Allied Chemical

SEMET-SOLVAY PETROCHEMICAL DIVISION

Dept. 574-AW, 40 Rector Street
New York 6, N. Y.

National Distribution • Warehousing in Principal Cities

Do YOU want a Law which encourages STRIKES?

A bill is now before Congress to exempt the building trades unions from some of the vital provisions of the labor reform law enacted last year.

This bill (H.R. 9070 — the so-called "common situs" picketing bill) would amend the law to permit construction unions to make use of blackmail picketing and secondary boycotts to enforce their demands.

It would promote strikes and jurisdictional disputes in the construction industry and again expose the interests of the public and the rights of individuals to the mercy of some unscrupulous union leaders.

Hon. Graham A. Barden, North Carolina Democrat and Chairman of the House Education and Labor Committee, had this to say about the "common situs" picketing bill on the House floor:

> **"If we enact H. R. 9070, or any of the other pending common situs picketing bills, we will enlarge the broad scope of the legal power to strike which building trades unions, including the Teamsters Union of James Hoffa, now have to strike any building contractor with whom they have a dispute by adding thereto a right to strike and harass all neutral contractors and subcontractors and their employees who happen to be working on the same building project as the contractor with whom the unions happen to have a dispute.**
>
> **"If this legislation is enacted any one of them may legally use the secondary boycott strike and picketing weapon to shut down any construction project in its entirety, including vital national defense projects, any time it suits their whim or fancy."**

The Check list at the right shows what would be possible under this bill. If you want to keep the new labor reform law fully effective, let your voice be heard in Washington. Check off your opinion on this ballot and send it to your Congressman and Senators.

This advertisement is sponsored by . . .

BALLOT

HERE'S YOUR CHANCE TO VOTE FOR OR AGAINST THE THINGS THIS AMENDMENT WOULD DO:

	I'm for it!	I'm against it!
1. Allow a union in the construction industry to stop all work by other contractors on a school, a housing project, a missile base, a hospital or other structure because it is having a dispute with one contractor.	☐	☐
2. Allow construction unions to boycott the use of prefabricated materials, even ready-mixed concrete, and insist that all work be done on the job at additional cost to consumers.	☐	☐
3. Allow a union to make use of the secondary boycott to exclude material and equipment it does not wish to use.	☐	☐
4. Allow construction unions to circumvent the rights of individuals by excluding non-members from jobs, thus achieving in effect the closed shop.	☐	☐
5. Allow unions to prevent the use of labor-saving equipment, thus adding to the inflationary spiral by raising construction costs.	☐	☐
6. Allow unions to shut down construction projects by engaging in jurisdictional disputes.	☐	☐
7. Allow a construction union to shut down an entire factory or defense plant when it has a dispute with a contractor doing painting, alteration or other work on the premises.	☐	☐

Dear Congressman:
Senator:

I am for ☐ against ☐ the "common situs" picketing bill (H. R. 9070) and all other bills like it. I will be interested in learning how you vote on this.

Name _____

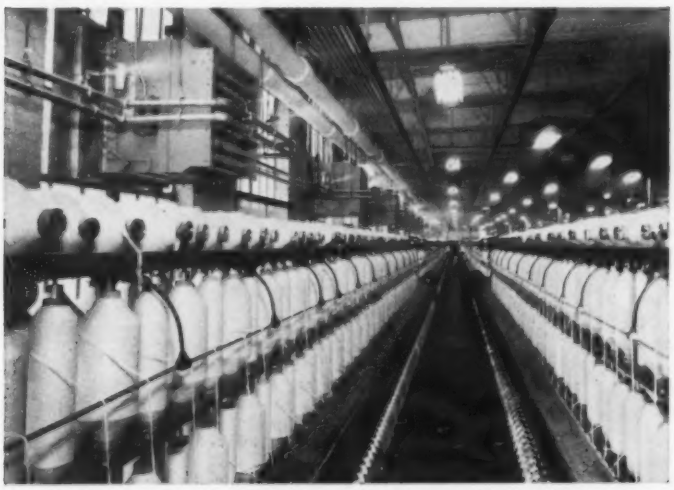
Address _____

City _____ State _____

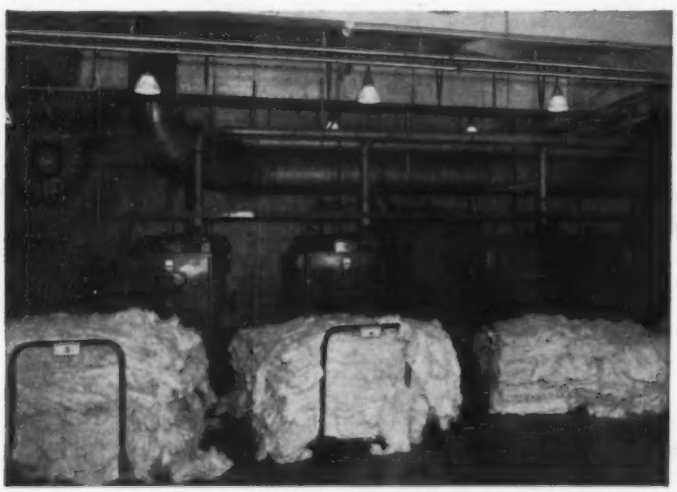
TEXTILE INDUSTRIES

. . . to acquaint employees and the public with pending labor legislation.

Amco Central Station Air Conditioning, using cold water for cooling in warm weather, maintains the proper humidity and temperature conditions year 'round in the above spinning room.



Amco ductless system of humidification, cooling and ventilating installed in a spinning room. Window units and Amco #6 atomizers visible at left, supply properly conditioned air.



Where straight humidification is desired. Amco #6 atomizers — operated with sensitive Amco humidity controls — provide just the right degree of relative humidity for blending, opening and picking operations.

Look to Amco for help in solving any air conditioning problem you may have

Most mill owners face a variety of air conditioning problems. All areas of the three mills illustrated here, for example, required different and distinct types of air conditioning. Amco helped solve these needs by the installation of the proper Amco system, suited to the individual requirements. The results have been better quality, greater worker comfort, and improved efficiency.

Do you have an air treatment problem in your mill? Choose from these systems, used by leading mills, to provide central station air conditioning in one area, humidification alone in another, or a unit ductless evaporative cooling system in still another. Amco, of course, also installs unit dry duct systems.

Whatever your needs, remember . . . you can depend on Amco to give you reliable advice and an expert installation of the system best suited to your particular case.

AMCO

SINCE 1888

AIR CONDITIONING EQUIPMENT

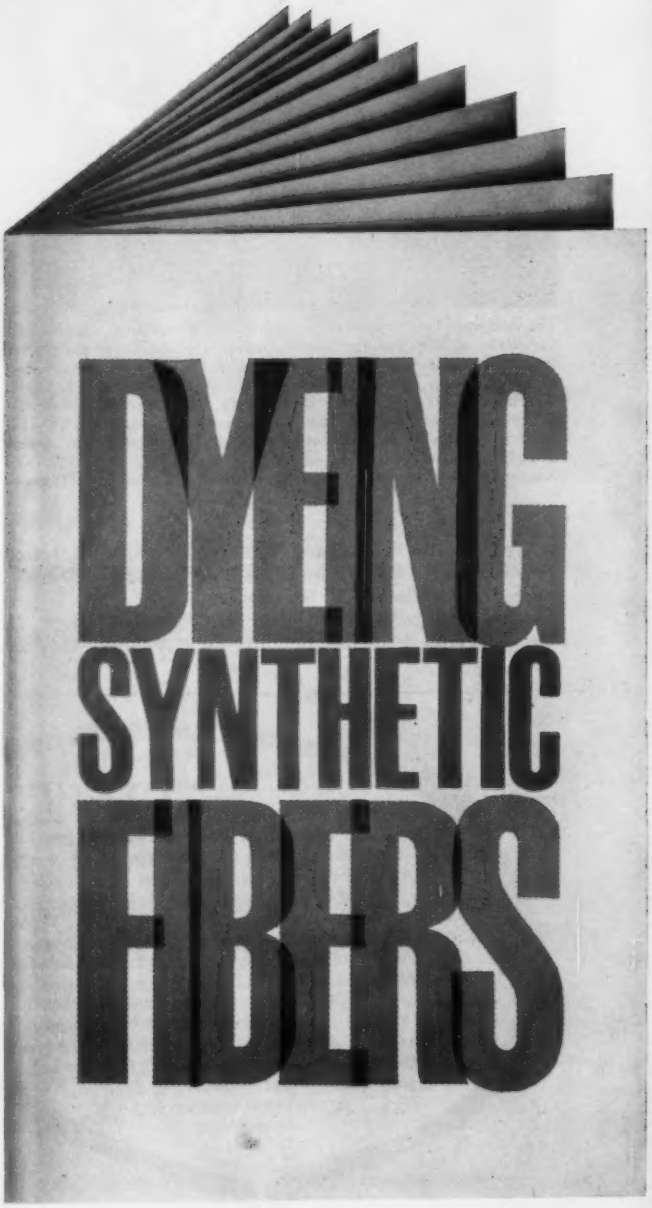
American Moistening Company • Cleveland, North Carolina

Branches: Atlanta, Ga. • Providence, R. I.

Toronto, Canada

to help solve current problems

NEW SIXTH EDITION



Keeping pace with the advances in man-made fibers, GDC has revised and expanded this booklet to include new developments, as well as methods and suggestions for dyeing synthetic fibers.

Send in the coupon and receive your free copy of this valuable booklet without obligation.

From Research to Reality

gdc gaf

GENERAL DYESTUFF COMPANY
A SALES DIVISION OF
GENERAL ANILINE & FILM CORPORATION
435 HUDSON STREET · NEW YORK 14, NEW YORK

CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA
PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO • IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

GENERAL DYESTUFF COMPANY
435 Hudson Street, New York 14, New York

Please send free booklet on DYEING SYNTHETIC FIBERS (GS-66 REV) to:

NAME .....

TITLE .....

COMPANY .....

ADDRESS .....

The Alabama Textile Education Foundation, which helps support and formulate policies for the Textile School, Auburn University, heard reports and elected two new trustees during the annual meeting at Biloxi, Miss., recently. Named to the foundation were **Jeff Lund,** Courtaulds (Ala.), Inc., and **W. E. Dunn,** Huntsville Manufacturing Co. Pictured here are members who attended the meeting. SEATED (left to right): **R. B. Horsley,** Pepperell (Ala.) Mfg. Co.; **Gene Gwaltney,** president of the foundation, The Russell Mfg. Co., Inc., Alexander City; **Holmes Floyd,** Opelika Mfg. Corp.; **Alex Turner,** Avondale Mills, Sylacauga; Mr. Dunn; **T. P. Roberts,** Adelaide Mills, Anniston. STANDING (left to right): **Joel E. Johnson,** Geneva Cotton Mills; **E. R. Lehmann,** West Point Mfg. Co.; **Cleveland Adams,** Auburn University Textile School; **Sidney Tingen,** West Boylston Mfg. Co., Montgomery; **Earl Heard, Sr.,** West Point Mfg. Co.; **Dwight Wilhelm,** secretary of the Foundation and executive vice-president of Alabama Textile Manufacturers Association which also was holding its annual convention in Biloxi.

retired. **Charlie R. DeYoung,** who was associated with the Victor Plant, has retired. * * * **Horace N. Stevens, Jr.,** has been appointed vice-president. Mr. Stevens is a member of the company's commodity division with offices in North Andover, Mass.

Dan River Mills, Inc., has announced that **Dr. R. Lee Wayland, Jr.,** has been named an assistant director of research. In his new post, Dr. Wayland will continue to direct the basic and applied research on special finishes for cotton and blended fabrics. **C. L. Zimmerman,** assistant director of research, has been assigned broader responsibilities and is now in charge of the research and development program on chemicals for water treatment and sizing. Mr. Zimmerman continues to direct research activities related to the company's extensive dyeing operations.

Appleton Woolen Mills has announced the appointment of **C. B. Sitterson** to the executive committee as director of research and development.

Melvyn Z. Kaslow has been elevated to the post of sales manager of all textile divisions of the Pellon Corp.

A Government Relations division of the American Cotton Manufacturers Institute has been established in Washington, D. C., and includes the following departments and their directors: Foreign Trade—**Dr. R. Buford Brandis,** chief economist; Labor-Taxation—**Charles G. Caffrey;** Economic Information—**Donald J. May,** who will also direct activities in the new raw materials department. **A. Lee Parsons** of Washington, who has been acting manager of ACMI's New York office, has been named director.

Continued on page 187

Stop worrying about **STATIC!**
Simco engineers have developed an electronic static eliminator that is unconditionally guaranteed to end all textile static problems. Now, the assurance of static-free warps or slivers is yours! When Simco "Midgets" are used on creels, warpers, cards, finishing machines, etc., you get the advantage of the most effective neutralizers available . . . yet you enjoy lowest possible cost! Why not equip your machinery now? Simco is America's largest manufacturer specializing in anti-static equipment and sprays, anti-static cleaning devices, and static measuring meters.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

fmc®

CAUSTIC has the stamp of APPROVAL

JANUARY MARCH
FEBRUARY

...AND ALL THROUGH THE YEAR!

FIRST CLASS CAUSTIC IS REC'D FAST BY fmc CUSTOMERS IN

BOSTON, MASS.

CHARLOTTE, NO. CAR.

CHICAGO, ILL.

...AND THROUGHOUT INDUSTRIAL AMERICA

SPECIAL HANDLING MEANS DEPENDABLE QUALITY!

SPECIAL DELIVERY FROM OUR STRATEGICALLY LOCATED PLANT IN

SO. CHARLESTON, W. VA.

FOR COMPLETE INFORMATION CONTACT OUR NEAREST OFFICE POST HASTE!

CAUSTIC SODA Liquid 73%; Liquid 50%, Regular and Low-Chloride Grades; Flake, Solid and Ground
CAUSTIC POTASH 45% and 50% Liquid; Flake

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

Putting Ideas to Work
FOOD MACHINERY AND CHEMICAL CORPORATION
Chlor-Alkali Division
General Sales Offices:
161 E. 42nd STREET, NEW YORK 17

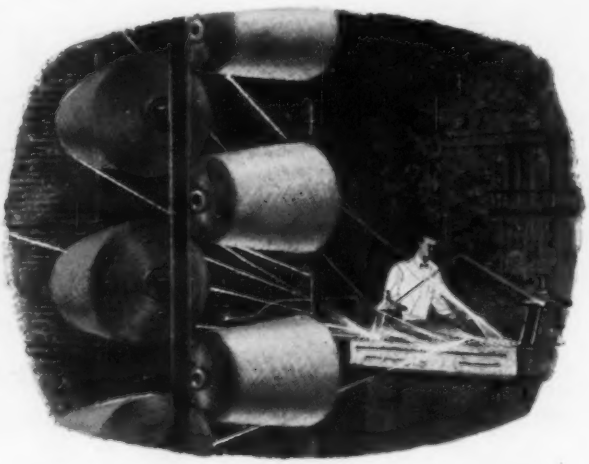
GOODYEAR

EVOLUTION OF

IT ALL STARTED when Leonardo da Vinci invented the belt drive for his polishing wheel. Spurred on by the drive's many advantages, engineers have striven for a more effective method of indirect power transmission ever since.

THE NEXT MAJOR DEVELOPMENT, although then seemingly unrelated, was the discovery of the vulcanization of rubber in 1839. Charles Goodyear not only fathered a multibillion-dollar industry, but also helped pave the way to much more efficient power transmission.

ANOTHER MAJOR BREAKTHROUGH came in 1941, when Goodyear introduced the first practical Steel Cable V-Belt for use on Army tanks. Here was the strongest, most efficienf, most heat- and stretch-resistant belt ever built. A wartime success, steel cable is used in belts handling today's toughest industrial drives.

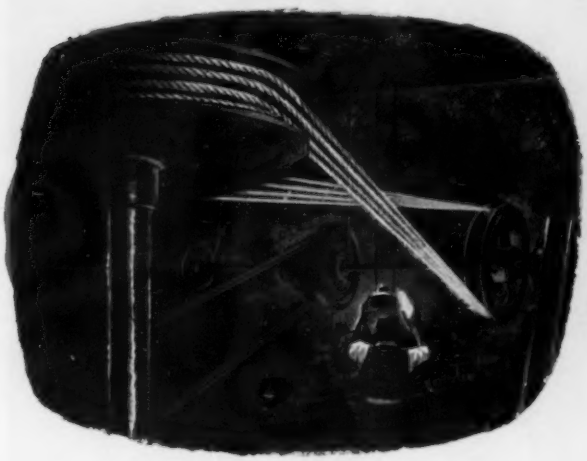


THEN CAME THE "MIRACLE" FIBERS and super-rated V-belts. Again Goodyear was in the fore with the HY-T V-Belt—a strong, shock-resistant belt that answered most multiple drive problems. But V-belt makers still sought a more effective way to overcome stretch and shrinkage.

For maximum, trouble-free horsepower hours on any V-belt drive, insist on the top belt from the top beltmaker.

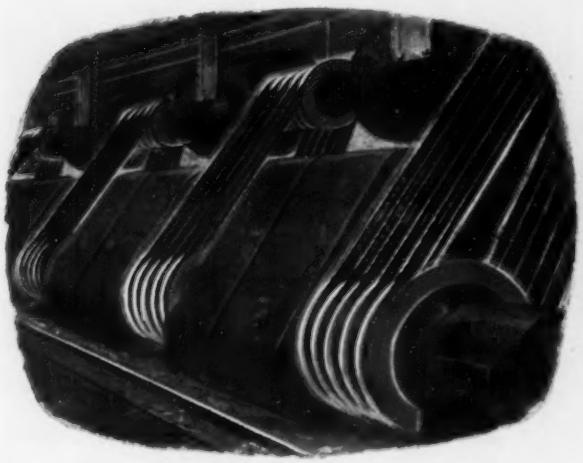
Lots of good things come from GOODYEAR

A REVOLUTION

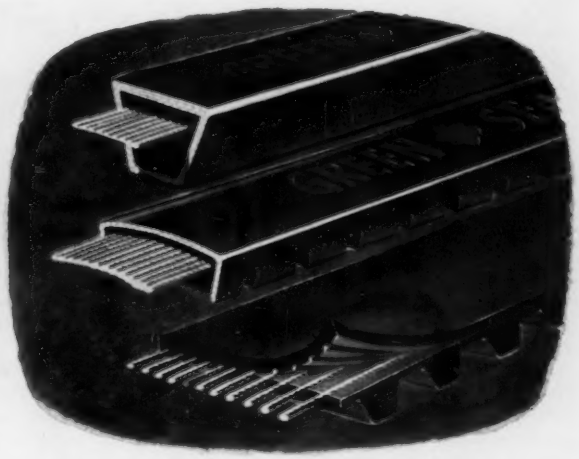


OVER A DECADE PASSED BEFORE a man named Combe introduced two new ideas in the transmission of power—teams of load-carriers and "wedge-in" action. His first multiple rope drive was not very efficient or durable, but started a whole new trend in development.

IT TOOK A LITTLE TIME before the first rubberized V-belts were introduced. Many of the earliest improvements were developed by Goodyear scientists. The greater efficiency of the V-belt soon placed it on many drives, despite shortcomings in length stability and strength.



GOODYEAR SOLVED THE PROBLEM with the 3-T Process to take surplus shrinkage and stretch out of synthetic cord. That development made possible multiple drive V-belts with true dimensional stability—Green Seal V-Belts by Goodyear that stayed matched on the drive or in storage.

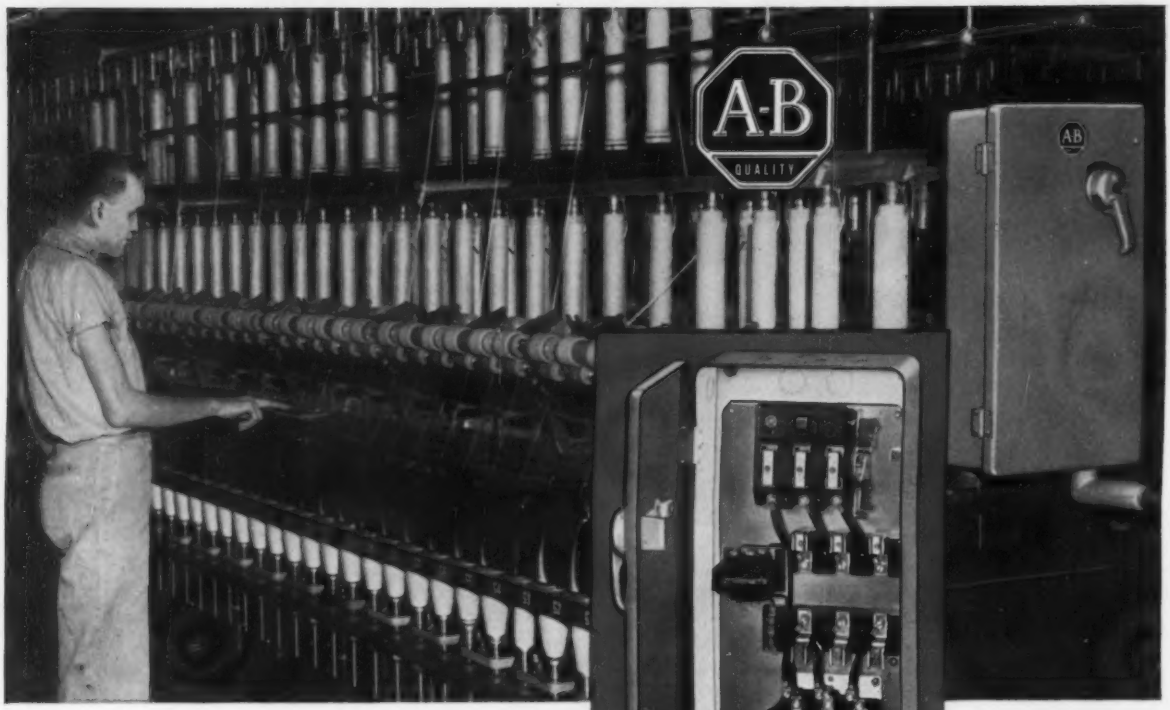


A REVOLUTION IN POWER TRANSMISSION was launched by the complete line of V-belts with the Green Seal—Compass-V-Steel, HY-T, E-C Cord, and the compact new HY-T WEDGE. With P. D. (positive drive) and Variable Speed Belts, they combine to offer Goodyear belts of unsurpassed quality for every need.

See your Goodyear Distributor or write: Goodyear, Industrial Products Division, Lincoln 2, Nebraska, or Akron 16, Ohio.

YEAR THE GREATEST NAME IN RUBBER

HY-T, Green Seal, E-C, Compass, PD-T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio



The best motor control for textile mill service

ALLEN-BRADLEY
Combination Starters

BULLETIN 712, Size 3 equipped with fuse clips and fused control circuit transformer. Made in ratings to 100 hp, 220 v; 200 hp, 440-550 v. Bulletin 713 with I.T.E. instantaneous trip circuit breaker. Made in ratings to 250 hp, 220 v; 500 hp, 440 v; 600 hp, 550 v.

You'll have complete protection at "lower installed cost" with Allen-Bradley Bulletin 712 combination starters—plus a neater job than with a separate starter and disconnect switch.

Here are the features you get. The Bulletin 712 has starter and disconnect switch in one enclosure, and the cabinet door cannot be opened unless the disconnect switch is OPEN—and the starter is "dead." When the switch is open, all three movable contacts are *plainly* visible—you can *see* that all the lines are open. Also, the incoming terminals are protected with an insulating shield—there's no chance of accidental contact with a "hot" lead. In addition, the handle can be locked ON or OFF with up to three padlocks of any type.

In addition, the quality finish of A-B starters assures positive protection against the exceptionally humid atmospheres in textile plants.

For the best in motor control—insist on Allen-Bradley combination starters for your textile plant.

Allen-Bradley Co., 208 W. Greenfield Ave., Milwaukee 4, Wis. In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

A-B makes a complete line of Quality Starters for the Textile Industry

Loom Motor Starting Switch with toggle action—Bulletin 1209. Enclosure excludes lint. Available with pedestals.

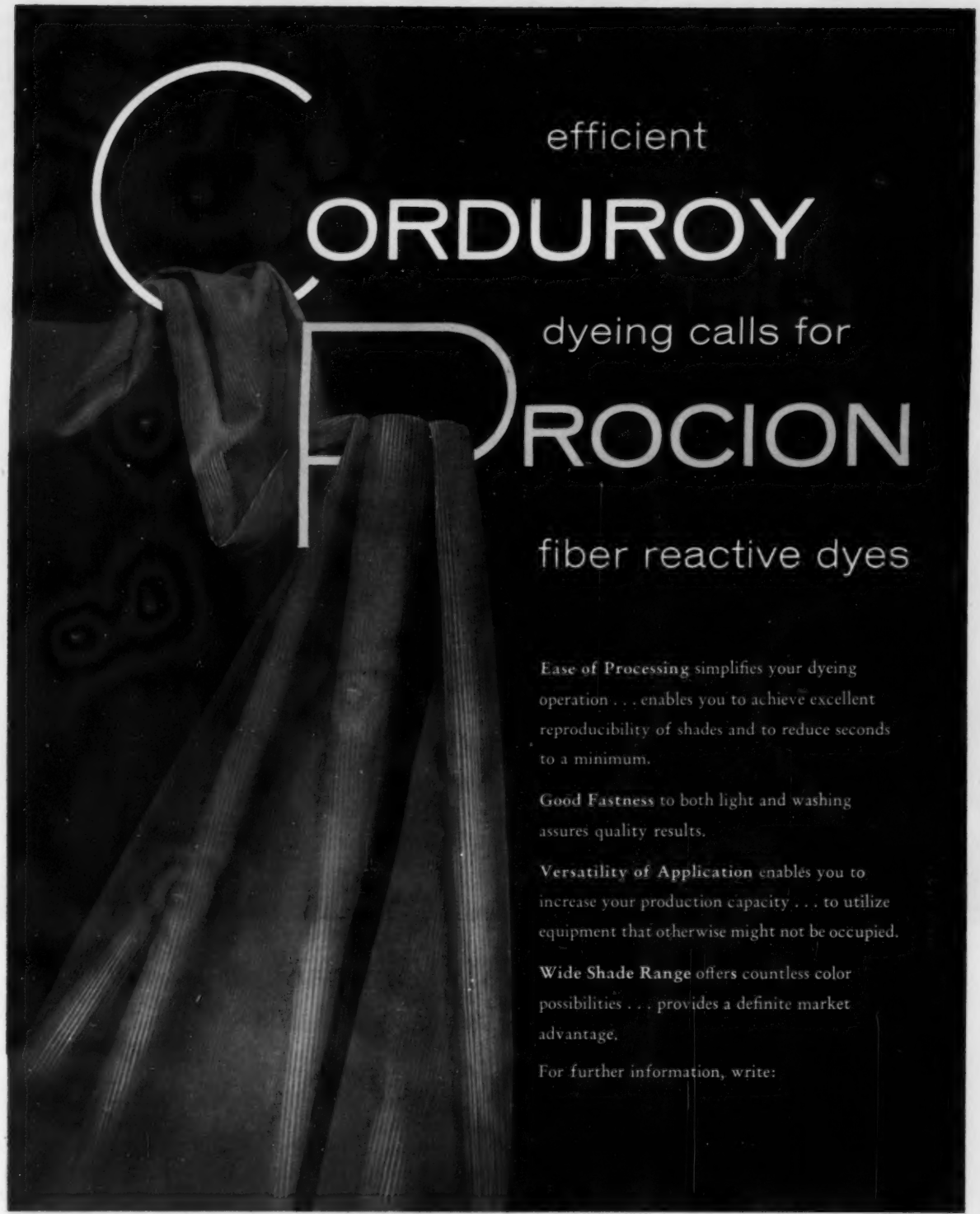
Automatic Across-the-Line Starter—Bulletin 709 Solenoid Starter with accurate overload protection. Made in nine sizes.

Manual Stepless Resistance Reduced Voltage Starter—Bulletin 640. Acceleration is under control of operator.

Automatic Resistance Starter for velvet smooth starting at reduced voltage—Bulletin 740. Adjustable to exact load.

Automatic Autotransformer Reduced Voltage Starter—Bulletin 746. Starting voltage and accelerating period are adjustable.

ALLEN-BRADLEY QUALITY MOTOR CONTROL



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Ease of Processing simplifies your dyeing operation . . . enables you to achieve excellent reproducibility of shades and to reduce seconds to a minimum.

Good Fastness to both light and washing assures quality results.

Versatility of Application enables you to increase your production capacity . . . to utilize equipment that otherwise might not be occupied.

Wide Shade Range offers countless color possibilities . . . provides a definite market advantage.

For further information, write:

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A Subsidiary of Imperial Chemical Industries Limited, England

West Coast Representative: Chemical Manufacturing Company, Incorporated of California

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Procion and the processes for its use and application to textiles are the subject of patents and patent applications in the U.S.A. Trademarks of I.C.I. Ltd.

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Rewinding operation at one of the ten Sonoco paper machines

Sonoco makes its own paper!

The entire textile industry benefits from the fact that Sonoco makes its own paper. Here's how—

The dependability and economy of Sonoco cones, tubes, cores and spools begin with the paper from which they are made. To meet customer specifications, Sonoco operates ten modern paper machines to produce over 250 different weights, grades, surfaces and colors. Sonoco, therefore, is able to exert close quality control from raw material to finished product. That's why you can depend on a Sonoco product to perform the function for which it was designed—*no more, no less.* This saves you money, improves the quality of your production and helps reduce downtime.

Only Sonoco, in its field, offers a completely integrated manufacturing operation and 60 years' experience in creating and producing all types of paper textile carriers. Sonoco has the necessary knowledge, skill and capacity to meet the ever-changing techniques of the textile industry. *Let Sonoco experience help you!*

SONOCO
Products for Textiles

sonoco
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1021

CONQUEST IN TEXTILES

With increased research, the textile industry is uncovering many new, practical and economical uses for RANDO-WEB® structures. Already known is the fact that nonwovens permit an unlimited variation of fibre blends ... that nonwovens are light in weight, washable, dry cleanable, smooth, soft, firm, supple, thick or thin, wrinkle resistant to a degree that cannot be achieved by conventional finishing techniques. All are important performance properties to manufacturers, retailers and consumers alike.

In the illustration are shown just a few of the many products using engineered nonwovens in whole or part.

HAT • DRESS • UNDERGARMENTS • BELT • POCKETBOOK • SUITCASE • COAT • SHOES • HANDKERCHIEF • TIE • UPHOLSTERY • DRAPES • RUG PAD •

FREE BULLETIN giving more detailed information on fibers used, webs made, end products. Write for your copy.

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No other machine in the world can make uniform random webs like it.

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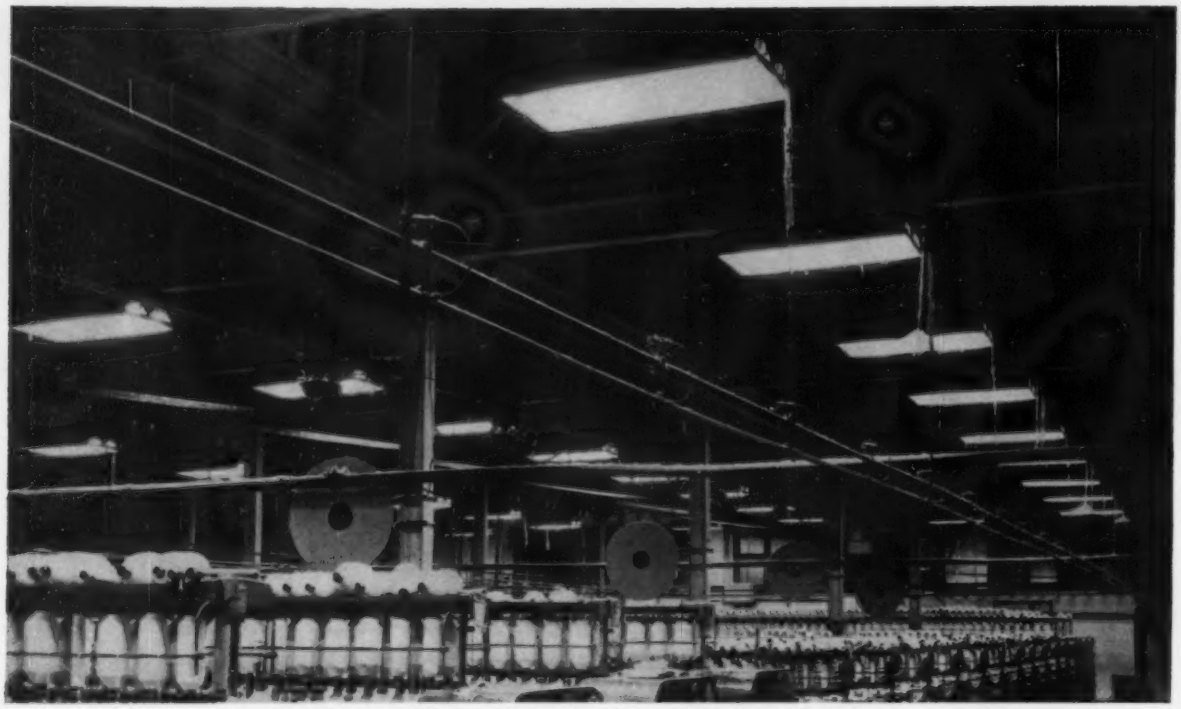

You can't afford to let your mill walls

GROW DARK WITH MILDEW

Cost-conscious textile mill maintenance men everywhere are solving moisture, corrosion and mildew problems with MINNESOTA PAINTS' MINNLITE fume-proof, rubber base paint. MINNLITE is a specially formulated paint ideally suited to the damp and corrosive conditions commonly found in textile mills.

MINNLITE can help you substantially reduce wall and ceiling maintenance costs because it:

RESISTS MILDEW. MINNLITE stays whiter and cleaner looking longer because it resists fungus growth even when exposed to warm, humid atmospheres for long periods of time.

UNAFFECTED BY MOISTURE. MINNLITE is a rubber base paint made from the latest synthetic rubbers, processed especially for protective coatings. MINNLITE won't peel, blister, stain or soak through. It is completely unaffected by moisture in any form.

MINNLITE IS NON-YELLOWING even under the most unfavorable conditions. In addition, its high gloss surface permits only a minimum amount of lint adherence. So MINNLITE coated walls and ceilings stay bright and clean looking longer.

IMPROVES LIGHTING. By resisting fungus growth, shedding lint, and retaining its whiteness, MINNLITE reflects more light longer and increases the efficiency of existing mill lighting.

RESISTS STRONG CHEMICALS. MINNLITE remains unaffected by gases. It also combats rust and corrosion from both acid and alkaline conditions.

Working out of the Atlanta factory, MINNESOTA PAINTS' staff of textile mill paint salesmen have had years of experience with the particular paint problems encountered in textile mills.

Call or write Call PLaza 3-5151 or write our Atlanta office—1314 Murphy Ave., S. W. Our staff of paint experts will help you reduce mill maintenance and, at the same time, keep your mills brighter and cleaner longer between paint jobs.

Minnesota PAINTS

MINNESOTA PAINTS, INC.

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Weaving Spun Synthetics? or Blends?

Seyco Film E

is what you've been looking for

For:
- More efficient weaving
- Ease of desizing
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- More first quality cloth
- Reasonable cost

Ask for our bulletin on SEYCO Film E

or

telephone collect for an in-plant demonstration.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

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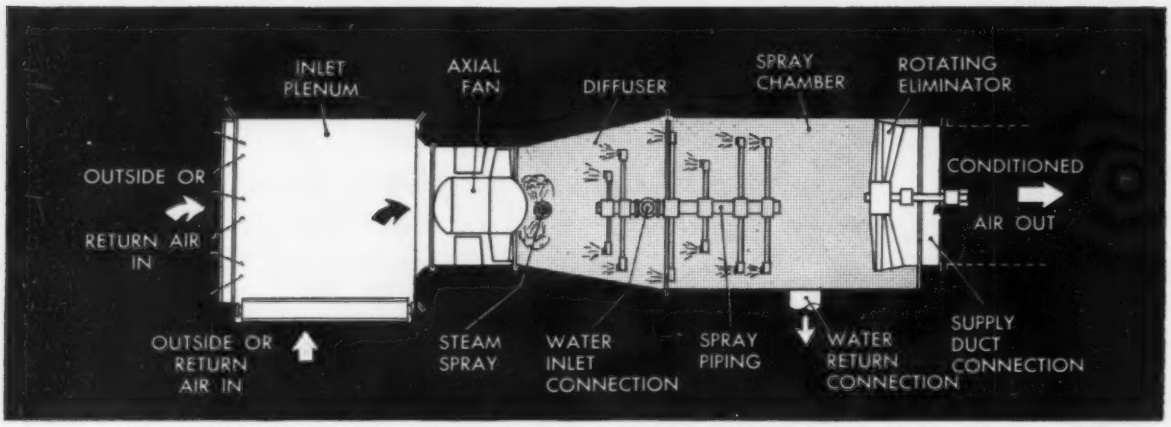
SEYCO

NO AIR FILTERS?
NO AIR FILTERS!

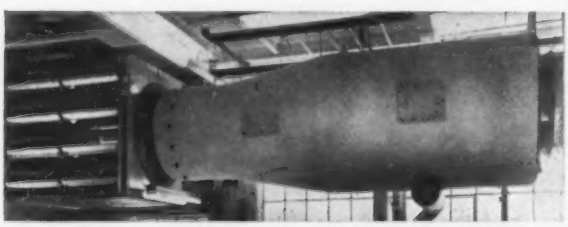
This Carrier Rotaspray Air Conditioner is self-cleaning!



Rotaspray units are self-cleaning and require no filters. Instead of trying to keep lint and coarse particles out as conventional systems do, the Carrier unit lets them enter, separates them from the air and returns them to a central point for automatic collection disposal.

As important as the self-cleaning feature is, it's only one of many ways the Carrier Rotaspray Weathermaker System* has proved itself vastly superior to conventional close-control air conditioning systems. For example:

UNITARY DESIGN. Instead of one large conventional central station system serving several departments, each department has its own Rotaspray unit and can change its temperature and humidity to meet its individual needs.



Carrier Rotaspray Weathermaker units may be installed rooftop mounted, ceiling suspended or outside wall mounted.

SMALLER APPARATUS SIZE. A Rotaspray unit requires less than 1/3 the space of a conventional system of equal capacity.

ELIMINATES MANY SYSTEM COMPONENTS. Units require no water strainer, water pump, water tanks, city water or drain piping. No apparatus room and no floor drains needed.

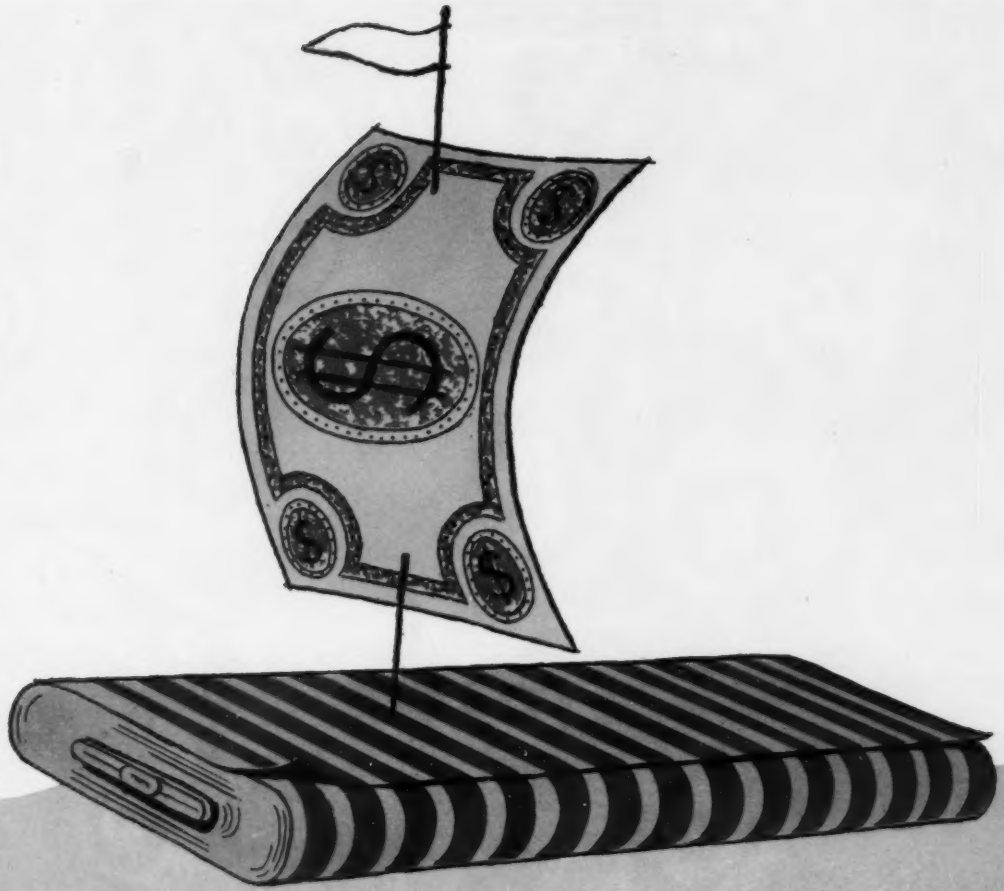
BETTER HUMIDITY AND TEMPERATURE CONTROL. Eliminates dew point control and its problems. Within Rotaspray System capacity, departments simply "dial" the temperature and humidity required.

In all, there are 17 reasons why it's well worth your while to look into the Carrier Rotaspray System for your mill. They range from lower installation costs to superior efficiency and substantial savings in operation and maintenance. For information, write Machinery and Systems Division, Carrier Corporation, Syracuse 1, New York.

*Reg. U.S. Pat. Off.

BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier



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LIQUID DETERGENT

(Neutral 35% Active Alkyl Aryl Sulfonate)

There's one simple reason why NACCONOL SL is the largest selling liquid detergent in the textile industry. It's the best detergent buy!

NACCONOL SL delivers more cleaning power per dollar on an active ingredient basis than most dry products. As a liquid, it also cuts production time and costs and minimizes waste. Clean and easy-to-handle, NACCONOL SL requires no dissolving, remains clear and free-flowing even below 32°F.

A mill trial will quickly convince you of the economy of NACCONOL SL. Call or write your nearest National Aniline office for a test sample.

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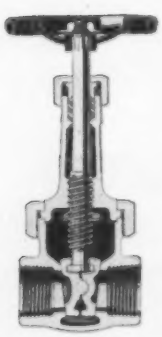
No other 125 lb. Union Bonnet Bronze Gate Valve has all these features

Union Bonnet for extra safety . . . *cylindrical* body design to distribute pressure uniformly and prevent distortion . . . *extra thickness* at points of greatest strain . . . these features *alone* provide the vital margin of superiority over other valves in its class. Together with Stemalloy Stems®, Non-Slip® Handwheels, and many other exclusive features, they actually put this outstanding new valve in a class by itself. You will *see why* when you compare it part-for-part with any other valve designed for similar service. Let your Lunkenheimer Distributor make this comparison for you, or write the Lunkenheimer Company, Cincinnati 14, Ohio.



You Can't Find the Cost of a Valve on a Price List

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LUNKENHEIMER®

THE ONE *Great* NAME IN VALVES

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THE DYER
WHO SEES THE SANDOZ REPRESENTATIVE

. . . takes advantage of the broadest selection of dyes available.

. . . chooses a Sandoz dye with the necessary shade and fastness for every variety of stock, yarn, or fabric going through his dyehouse.

. . . relies on superb technical service — and gets his answer promptly whenever he needs help.

Call Sandoz. AL 5-1700, in New York City. District Offices in Charlotte • Cincinnati • Fair Lawn, N. J. • Hudson, Mass. • Los Angeles • Philadelphia. **Sandoz, Inc., 61 Van Dam St., New York 13, New York.**

CHOOSE FROM THESE OUTSTANDING SANDOZ SPECIALTIES

Alizarine Light colors — level dyeing acid dyes with good to excellent light fastness on wool and silk.

Alizarine Milling, Brilliant Alizarine Milling colors — for dyeing wool, nylon, or silk from a weakly acid bath. Extremely fast to light, and to mill processing; meet men's wear requirements.

Artisil* dyes—level, fast colors for acetate, polyamide, polyester and certain acrylic fibers.

Cuprofix* dyes—for good wet fastness on cotton and viscose. For improved fastness of anti-crease treatments.

Drimarene*-Z reactive dyes—for prints of bright shade and high wet fastness on cellulosic fibers. Unfixed portion of dye easily removed by washing. Excellent storage stability of printing pastes.

Drimarene*-Y reactive dyes—for padding bright shades on cellulosic fibers. Excellent stability, highly soluble; avoid tailing-off and migration effects. Unfixed portion of dyestuff simply and easily removed. Excellent reproductibility of shade.

Foron* ultra-dispersed dyes—for polyesters and blends. Excellent light, wet, perspiration, and abrasion fastness; minimal particle size.

Lanasyn* dyes—fast, neutral dyeing premetallized dyes for wool, nylon, silk, and acrylic fibers.

Lanasyn Brilliants—non-metallized dyes in bright shades, for use in combination with the regular Lanasyn dyes.

Lumicrease* dyes — fastest-to-light direct dyestuffs ever offered — a complete line of color.

Omega and Metomega Chrome dyes—for woolens and worsteds that meet the highest standards in men's wear.

Pyrazol* Fast dyes—direct colors for fastness to light and washing, offering maximum economy.

Sandonyl* dyes—for barre-free color on filament nylon; superior light and wash fastness.

Sandothrene Ultrasperse* Vat dyes — especially prepared for all types of dyeing; and, for printing, Sandothrene-M Vat dyes are recommended.

Vitrolan* colors—acid dyeing, premetallized dyestuffs giving good colorfastness on wool and various synthetic fibers—at moderate cost.

Xylene Fast colors—level dyeing on wool or silk, using sulfuric acid. Good selection for bright shades.

Xylene Fast "P" colors—combine good fastness to wet treatments with level dyeing on wool, nylon and silk from neutral or weakly acid baths. All have approximately equal rates of exhaustion and migration, and behave in combination as would a homogenous dyestuff.

Pigments — Printofix* resin bonded colors for textile printing and padding.

Chemicals—for brighter, whiter whites, Leucophor* BS Liquid optical brightener; or, in a bath with acid catalyzed resins, Leucophor ACR. For softening, Ceranine* HC softening agent. For level dyeing, Lyogen* P and Lyogen DK and SMK leveling agents. For efficient soil removal, Sandopan* DTC, the leading detergent for cotton and synthetics.

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*T.M. Sandoz, Inc.

SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ

A message to the Carpet Industry . . .

WHEN ONE BLUE CHIP COSTS THOUSANDS

You're playing for high stakes when each blue chip you ante is worth thousands of dollars . . . and your stake is just as high when you purchase a new shearing machine for your mill. Year after year, Curtis & Marble HCM Carpet Shears continue to out-perform any other shear on the market. They are faster, provide more even shearing and give longer, trouble-free production with very low maintenance cost. Wool, Nylon, Acrilan and other types of carpeting can all be sheared on these outstanding machines. We don't ask you to take our word for it! Before you make a capital investment in a machine of this caliber and cost, ask any of the leading carpet manufacturers in this country what Curtis & Marble Carpet Shears are doing for them. They'll tell you why the HCM Shear is the "blue chip" machine in the industry. We'll be glad to sit down and talk it over with you any time. Write or phone us now for an appointment.

18 foot HCM double cutter carpet shear

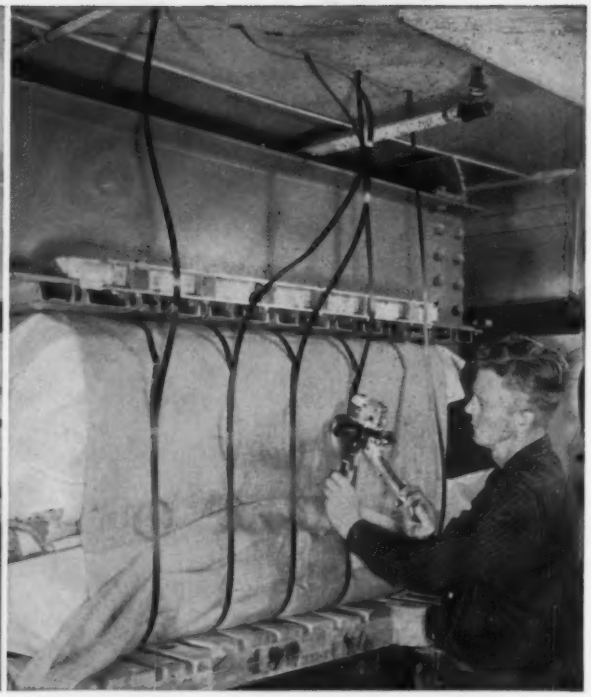
HEADQUARTERS FOR FINE CLOTH FINISHING MACHINERY SINCE 1831

CURTIS & MARBLE MACHINE CO.

72 CAMBRIDGE STREET • WORCESTER 3, MASSACHUSETTS
ESTABLISHED 1831

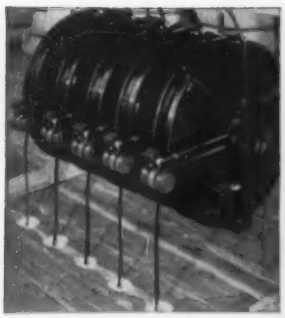
SOUTHERN SALES & SERVICE • LAURENS ROAD
GREENVILLE, SOUTH CAROLINA

Strapping is fed from dispensers in room above press. A magnetized bar holds the straps in position while bale is readied.



Signode's exclusive Model SFC tool tensions the strapping, feeds seals from magazine, and crimps them. Straps are severed at the seal. No waste strap.

Signode way produces denser bales and reduces strap use by 17%



Strapping dispensers can be in a variety of locations. Above, they are shown set up in an overhead storage area; at right they are shown installed on a framework over the press. They may also be installed on the floor beneath the press or behind the operator.

Here's an example of a simple and inexpensive answer to a packaging problem. Waste—which was part of the former cut-to-length strapping method—was eliminated, with a 17% saving in the amount of strapping used. Bales are better looking. Their increased density saves about 7% of valuable space in storage and shipment. The entire strapping operation is simplified, goes easier and faster.

Why not let a Signode man take a new look at your packaging and shipping operation. He has an eye for savings, specialized knowledge of textile applications, and a complete line of strapping tools and machines at his disposal. Call him today, or write:

Exclusive Straptrollers prevent overrun of strapping from dispensers.

SIGNODE

First in steel strapping

SIGNODE STEEL STRAPPING CO.

2664 Western Avenue, Chicago 47, Illinois

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

HARSHAW

Zinc Nitrate Flake

Readily Soluble
High Purity
Less Fines
Easy to Handle

Harshaw Zinc Nitrate Flake is especially suited for polymerizing resins currently being used for wrinkle-free and wash-and-wear fabrics.

Harshaw Zinc Nitrate Flake is produced under rigid control assuring the user of uniform resin catalysis at all times.

Harshaw Zinc Nitrate Flake measures about 1/32" thick by 1/2" long, thereby reducing dust and fines to absolute minumum.

Packed in 300 or 100 pound Leverpak drums with polyethylene liner, Harshaw Zinc Nitrate Flake is available for immediate shipment. Write for samples and prices.

TYPICAL AVERAGE ANALYSIS:

Zn	25.20%
Fe	0.001%
Pb	0.005%
H_2O Insoluble	.008%
pH of 5% solution	5.1

HARSHAW

THE HARSHAW CHEMICAL CO.

1945 E. 97th Street, Cleveland 6, Ohio

CHICAGO • CINCINNATI • CLEVELAND • DETROIT • HASTINGS-ON-HUDSON, N. Y.
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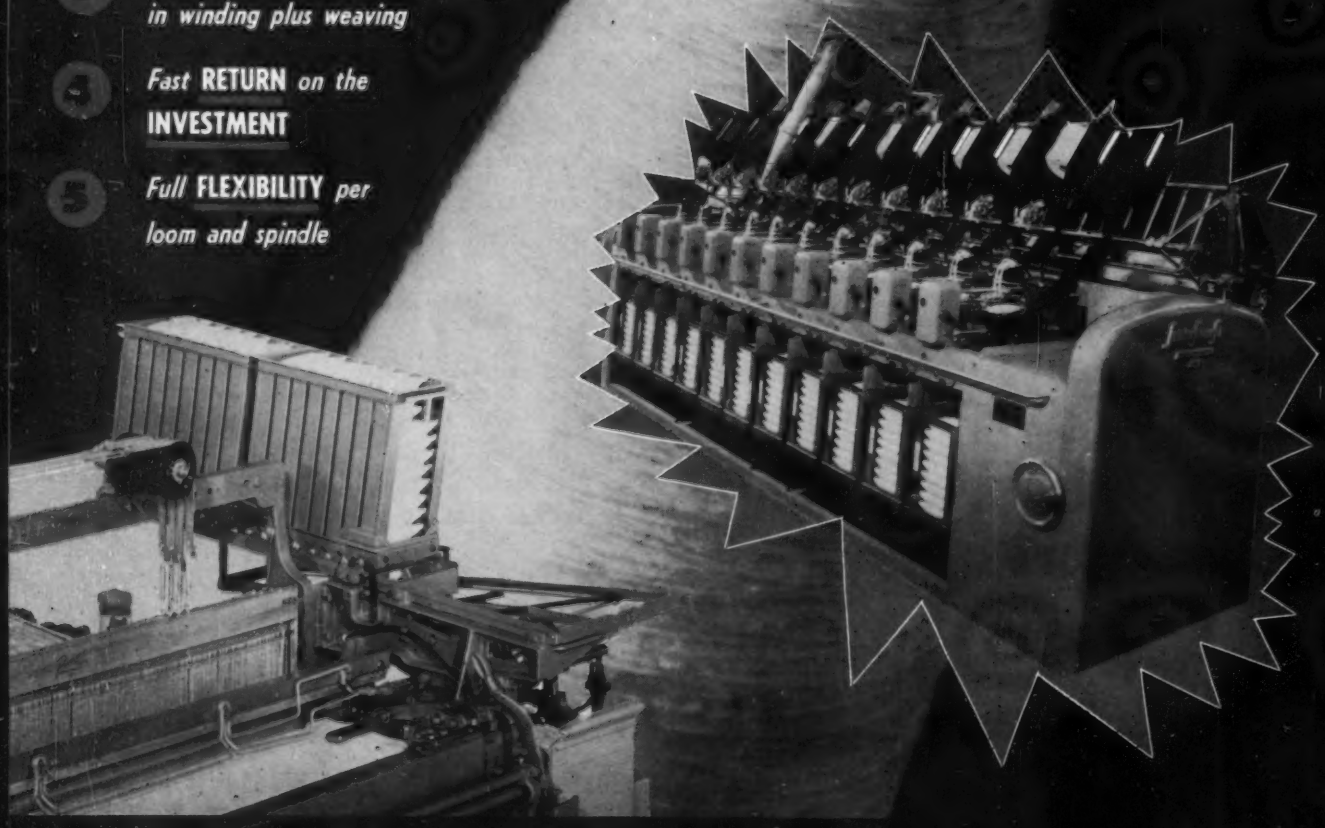
offers new approach to mill automation with individual spindle

DRAPER AUTOMATIC FILLING MAGAZINE LOADING DEVICE

5 MAJOR ADVANTAGES

1. *Highest* **WEAVE ROOM EFFICIENCY** *through precision-built tip bunch*
2. *Best ratings in* **CLOTH QUALITY** *through fewer and perfect transfers*
3. *Lowest over-all* **COST PER POUND** *in winding plus weaving*
4. *Fast* **RETURN** *on the* **INVESTMENT**
5. *Full* **FLEXIBILITY** *per loom and spindle*



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Sold and Serviced by THE TERRELL MACHINE CO., INC.

CHARLOTTE, N. C., U. S. A.

NEWS IN BRIEF

"Accentuate the Positive . . . " The textile industry in the United States must eliminate negative thinking and take positive steps to become more competitive in do-

mestic and world markets, says Edward A. O'Neal, Jr., president of Chemstrand Corp. Addressing the Charlotte (*N.* C.) Textile Club recently, Mr. O'Neal urged representatives of the textile industry to place greater emphasis on research and development, to take positive steps to bring about a change in the political philosophy and attitude of our governmental leadership, and to develop better market planning—programs that are long-range, yet flexible.

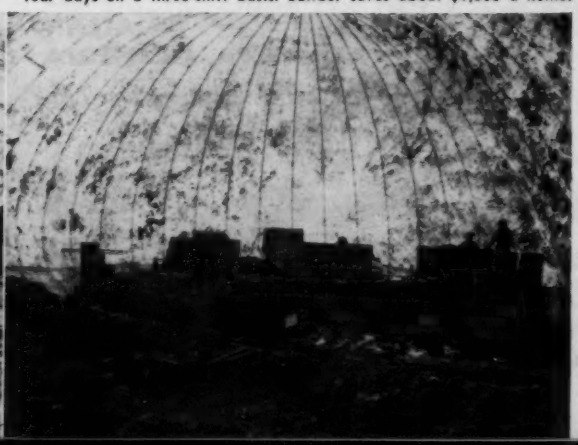
Must Label Blended Cotton on Contracts. American Cotton Manufacturers Institute has approved addition of the words "recleaned, blended or reprocessed" to Southern Mill Rule 13-A, which makes it read as follows: "No cotton that has been reginned, recleaned, blended or reprocessed, nor cotton that has been sledded, nor cotton that has been machined after the first ginning process, can be delivered against contract unless described as such."

Recession in Mid-1961? The next recession in business will get un-

der way by the middle of 1961 and will be mild and short. That's the nearly unanimous view of 20 of the nation's top government and business economists polled by the staff of *Report for the Business Executive,* weekly newsletter of the Bureau of National Affairs. They see a drop of 3% to 5% in GNP, decline of 10% in industrial production, a drop of less than 2% in personal income, and a rise in unemployment to 7½% to 8½% of the labor force. The economists predict that the recession will be much like those of 1953-54 and 1957-58, and will last less than a year.

Wash-and-Wear Not Always the Answer. Demand for no-iron sheets has not materialized, largely because of the use of fitted sheets, Frank McCord, market research director for the National Cotton Council, told a recent meeting of Southern Experiment Station representatives. Along the same line, a representative of Sears, Roebuck told the group that Sears has to a large extent discontinued wash-and-wear treatments for work

A Cleveland builder maintains his schedule despite the weather by using these air-inflated nylon shelters to cover the building sites. They measure 100' long by 50' wide by 25' high, and weigh about 1200 lb. They are blower-inflated in about an hour, and are heated. The builder keeps them up until the house is weather tight—usually four days on a three-shift basis. Builder saves about $1,000 a home.



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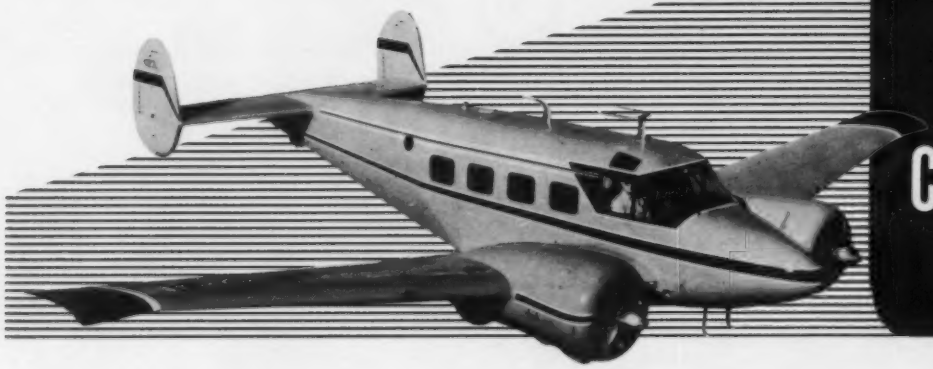

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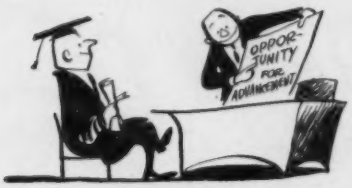
Beechcraft AIRFLEET OF THE TEXTILE INDUSTRY

clothing, because other properties, such as long wear, have more sales appeal.

Which Job for Textile Grads? These are the factors, in order of importance, which graduates of the Textile School at Auburn (Ala.) University consider before accepting a job, according to Cleveland L. Adams, school head: 1. Opportunity for advancement; 2. Train-



ing program offered; 3. Caliber of people they will work with, especially mill management; 4. Availability of schools and churches in the mill community; 5. Salary. Although starting salaries offered Auburn textile graduates this year are up $50 to $60 per month from those offered last year, they are still about $100 less on the average than starting salaries in other branches of engineering, Mr. Adams reported.

Industry Creates Own Problems. Speaking at the recent annual meeting of the Alabama Textile Manufacturers Association, Joel E. Johnson, vice-president of Geneva-Bama Cotton Mills and retiring

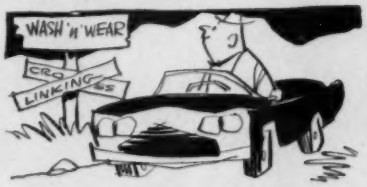
president of ATMA, told members, "Foreign competition . . . is a real and continuing threat . . . [but] need I remind you of the time in the not-too-remote past when our domestic mills were running six and seven days each week, piling up inventory on top of inventory, until the market was so oversupplied our goods could not be sold or, if so, at a price much less than the cost of production."

Cotton Men Reject Standards. At a recent meeting in Greenville, S. C., members of the Cotton Committee of American Cotton Manufacturers Institute, with representatives of various state and regional associations, examined proposed standards boxes from 1959-crop cotton submitted by the U. S. Department of Agriculture, and unanimously rejected them. E. S. McKissick expressed the sentiment of the group in a letter to the director of USDA's Cotton Division: " . . . We feel that the adoption of grade standards that have been so over-heated and over-machined and of such poor quality as the survey boxes would be a detriment to the cotton producer, gravely damage our export business, and work a tremendous hardship on the domestic mills. . . "

No Sudden Cotton Price Drop. The Special Cotton Policy Committee of the American Cotton Manufacturers Institute finds "lit-

tle reason to assume that there will be any sudden drop in cotton prices after the new season begins on August 1, or that there will be any appreciable reduction until the new crop cotton has moved in volume to the mills in the very late fall." The statement was prompted by a report in the daily trade press implying that cotton prices would drop two cents a pound on August 1, because of a decline in the price support level to be effective that date.

Road to Better Wash-and-Wear. The degree of wrinkle-resistance of wash-and-wear cottons seems to



depend on the degree of cellulose cross-linking achieved by the chemicals used, but only a fraction of the chemicals appears to end up doing the cross-linking, according to a report made to the recent national meeting of the American Chemical Society by Dr. S. J. O'Brien of American Cyanamid Co. This should provide a challenge for research, since more efficient chemical cross-linking might greatly improve cotton's

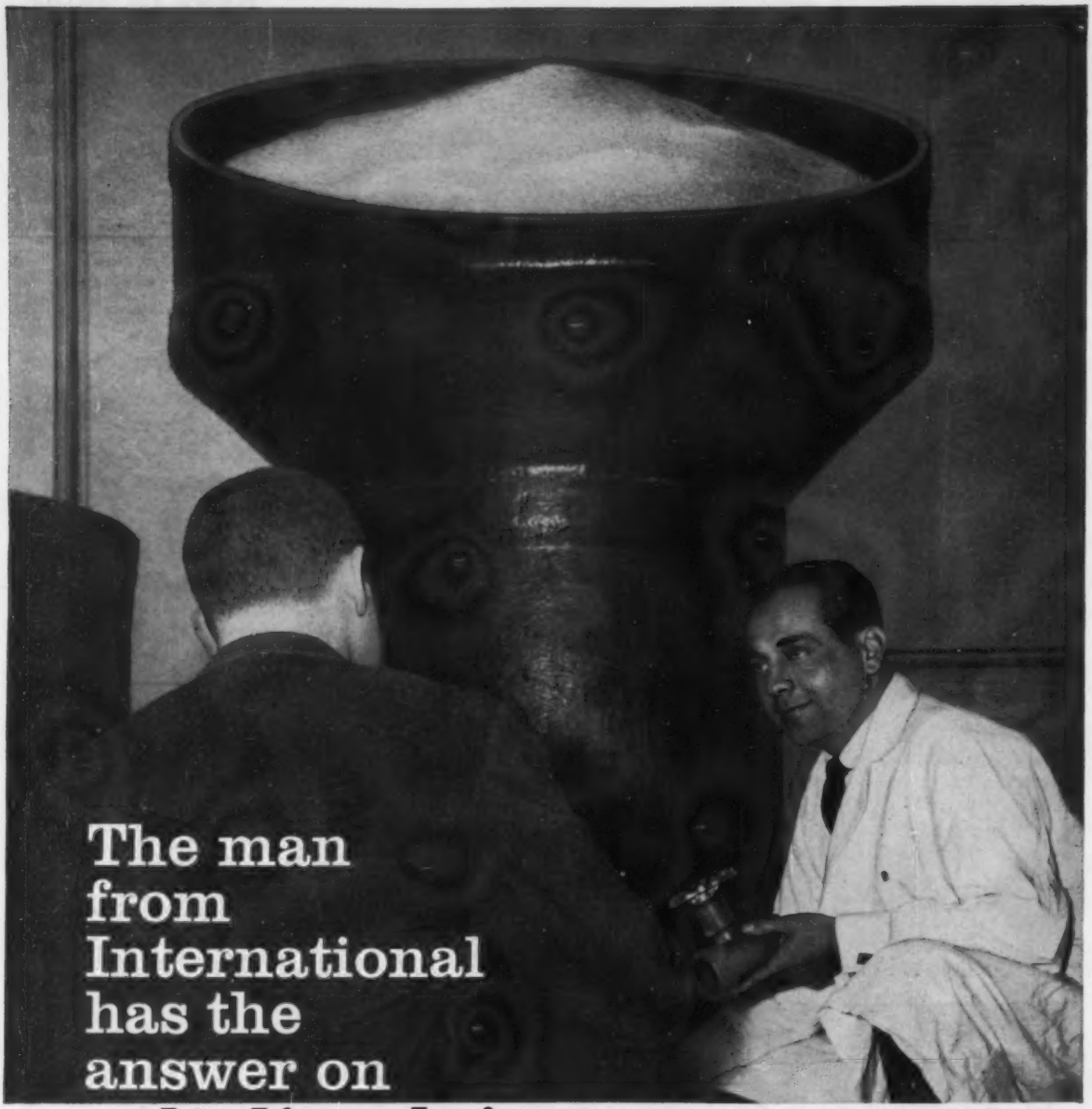
Labor-Management News

Newly Unionized. Employees at Bauers, Ltd., Waterloo, Ont., voted for representation by Textile Workers Union of America, 51-45. About a year ago, TWUA lost an election at the plant by one vote. * * * Cashmere Corp. of America, Cleveland, O., recognized TWUA as bargaining agent for its 53 workers. * * * Employees at New England Webbing Co., Pawtucket, R. I., voted for TWUA, 18-12.

Thumbs Down on Union. With 96% of eligible employees voting, Textile Workers Union of America was defeated 1,674 to 316 in an

election conducted at James Lees & Sons Co., Glasgow, Va., by the National Labor Relations Board. * * * Employees of Marine Hosiery Mills, Soddy, Tenn., rejected American Federation of Hosiery Workers 63-21 in an NLRB-conducted election.

Mount Hope Case on Tape. A professor at M.I.T.'s School of Industrial Management has compressed four years of a famous labor-management struggle into a two-hour tape recording. The voices of persons who participated in the litigation involving Mount Hope Finishing Co., North Dighton, Mass., and Textile Workers Union of America have been recorded, giving their comments on the case. The recording is the first in a proposed series, designed to bring drama to the study of legal procedures.



The man from International has the answer on salt dissolving

Here, the man from International Salt Company checks the rate of flow of a newly installed plastic Sterling Lixator* as his customer looks on, smiling. Reason for the smile: he's thinking of the time and money he'll save, thanks to this new salt-dissolving system. The exclusive Sterling Lixator is the most efficient and economical rock-salt dissolver ever developed. It simplifies the entire brine-making process, combining salt-storage, dissolving and brine self-filtration in one *automatic* operation. Lixate Brine is crystal-clear, fully saturated—and the only source of power used to produce it is gravity—which costs nothing. For expert advice on the particular Lixator for your needs, contact International Salt Company, headquarters, Clarks Summit, Pa. District offices: Boston, Buffalo, Charlotte, Chicago, Cincinnati, Detroit, Newark, New Orleans, New York, Phila., Pittsburgh, St. Louis.

*Registered T.M. of International Salt Company

INTERNATIONAL STERLING SALT SALT COMPANY

"A STEP AHEAD IN SALT TECHNOLOGY"

ability to resist wrinkles and creases; or, failing this, perhaps the present degree of wrinkle resistance could be attained with less chemical, he said.

Canadians Deflate Imports' Prestige. Canada's textile industry has devoted much time and effort to promoting its own products, and this work of past years is slowly "deflating the unwarranted prestige attached to imported products," I. D. Ritchie, president of

the Canadian Fabrics Foundation said recently. While stating that he had no quarrel with importation of the legitimate specialties which each country has, Mr. Ritchie said, "We do, however, object to floods of inferior . . . goods riding on the coat-tails of the prestige created by a few fine products."

Investment Advisers See Textile Downturn. There is growing evidence that a downturn for textiles may be near, says the *Value Line Investment Survey*. So far this year, textile companies have maintained the more favorable rates of production and shipments established in the second half of 1959. But, the *Survey* notes, prospects beyond midyear are poorer. New orders have been lagging and back-

logs are running down. Inventories of grey goods, while not excessive, are mounting. Cutbacks in passenger automobile schedules have led to deferment of deliveries. Also, the compact cars use less cloth and tire yarn. Price concessions may be needed to stimulate demand, suggesting mounting pressure on profit margins later this year. Increasing imports of finished fabrics and wearing apparel are also tending to depress selling prices. For 1960 as a whole, the *Survey* looks for most textile companies to show gains in sales and earnings over the 1959 figures. But textile industry results in 1961 may be on a cyclical downgrade.

Architect's sketch of the Merrimack Valley Textile Museum to be built at North Andover, Mass., at a cost of $150,000. Construction is expected to begin this summer. Exhibits in the new museum will tell the story of wool manufacturing from the earliest times to the present. The museum will also be a storehouse for industry records, and reference library.

Carpet Beetle Ousts Moth. The carpet beetle is vying with the clothes moth as Fabric Enemy No. 1, says entomologist Arnold Mallis in his new book, "Handbook of Pest Control." In many areas of

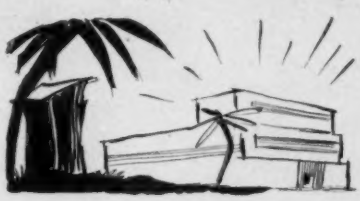
the U. S. the household-invading beetle is stealing the limelight from the moth at an alarming rate. The beetle's ravages in Western Pennsylvania, for example, outnumber those of the clothes moth by 10 to 1, the author reports.

More Wool Hose. The domestic output of men's wool hosiery climbed last year to 5.13 million dozen pairs, from a 1958 figure of 4.57 million dozen pairs, and wool captured 11.4% of the market compared with 10.3% in 1958, according to the Wool Bureau. Last year's figure represents a 27% increase from the low point of 4 million dozen pairs produced in 1954.

PTI Names Buildings. Two new buildings on the campus at Philadelphia Textile Institute were dedicated in the names of two of the College's foremost benefactors at recent Convocation-Dedication ceremonies. A 75-room dormitory was named for the late Fred C. Scholler, former president of Scholler Bros., Inc.; and the student union building was named for C. Scott Althouse, founder and former president of Althouse Chemical Co.

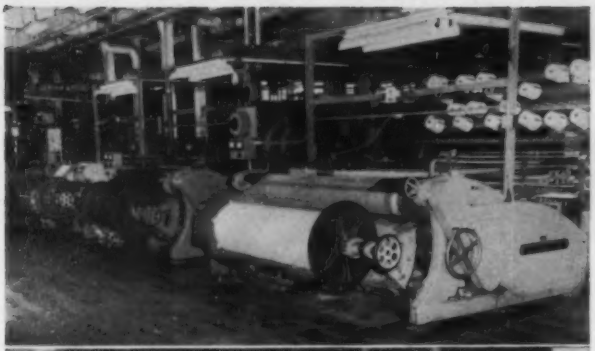
Council Asks Spinning Test Funds. The National Cotton Council is asking increased funds for government research leading to better ways to measure and improve cotton's spinning qualities. As a corollary to this the Council recommends expansion of the facilities at the pilot spinning plant at Clemson, S. C. The request is part of the Council position that increased emphasis should be placed on production research for cotton, rather than utilization research.

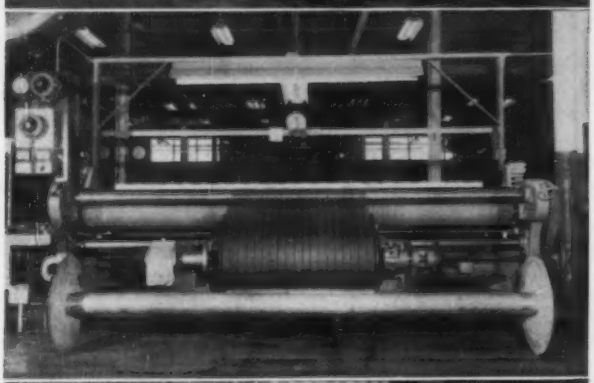
Big Loans for Foreign Mills. Various U. S. government agencies have given loans and grants to foreign countries for the purchase

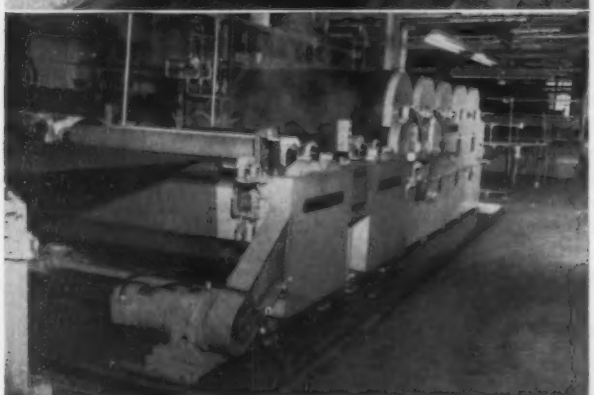


of textile machinery, which have totaled some $30 million in about the last two years. Countries receiving such aid include Ethiopia, India, Indochina, Iran, Israel, Korea, Pakistan, El Salvador, Spain, Sudan, and Syria.

Advances in Carpets Coming? Taking a look at the future during a recent meeting of the American Institute of Chemical Engineers,







THE COCKER GH SLASHER VERSATILE EFFICIENT

Shown here are several views of part of a Cocker 9 cylinder GH Slasher installation at Swift Manufacturing Company, Columbus, Ga.—one of America's most versatile mills. These slashers operate on Acetate, Rayon, Nylon, Cotton and blends—stripes, solid colors, as well as greige goods.

The second picture demonstrates the extreme flexibility of the Cocker GH Slasher—accommodating beams from 36 inches to the 128 inch beam shown in front of the machine—with no projecting spindles. Note also, the convenient control panel.

Shown clearly in the third picture is the revolutionary Cocker Torque Tube Drive* which eliminates troublesome belts, chains, sprockets, etc. This greatly reduces maintenance and simplifies changing beam widths.

The lower picture shows the cylinder section and two Model DA Size Boxes.

Due to especially heavy warp construction, maximum speeds on this particular installation are approximately 100 yards per minute. In other mills, Cocker GH Slashers are operating at speeds up to 184 yards per minute on lighter constructions.

We believe that the new Cocker Model GH Slasher is the most efficient and versatile slasher in the World. Let us give you full information.

*Pat. Pending

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WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

these are some of the things seen for carpets by John J. Hanlon, technical director for Mohasco Industries: Increased use of continuous dyeing methods; reduced dyeing times, because of the use of chemical additives in the dyebath; printing of carpets; increased color-fastness of all types of dyeings; and improvements in backsizing, possibly through the use of polyethylene hot melts.

Looping School Closes. Development of automatic techniques in looping have led to the closing of the school for loopers operated by the State Department of Trade Industrial Education at Hickory, N. C., as a service to the knitting mills and people of the area.

Merchandising Notes

American Wool Council has opened the 14th annual "Make It Yourself With Wool" contest. Girls between the ages of 13 and 22, in 21 states, are invited to enter one of 250 district competitions, the winners of which will compete in state contests next fall, with forty finalists meeting in a national contest in Denver next January. Top Junior and Senior winners will get a "Designer's Tour" to Europe.

Dan River Mills, Inc., through its subsidiary, Dan River Inter-

national Corp., has opened a sales office in London—its first outside the U. S.

Wm. G. Leininger Knitting Co. is marketing an athletic sock for men, guaranteed for "a month's wear in every pair," even under the most rigorous wear conditions. Replacement will be made if the sock wears through at any point during the guarantee period.

Woolens and Worsteds of America is spearheading an all-out campaign for the labeling at retail levels of U. S.-manufactured wool apparel as "American-Made." "If we are to compete with the all-too-powerful 'imported' label we must clearly label American merchandise so that the customer whom we are educating to the merits of our products can promptly identify them at point of purchase," said a WWA spokesman.

Werner Textile Consultants' C. W. Bendigo told a marketing group recently that, "Advertising budgets for textiles must be stepped up if the industry wants to improve its profit outlook and maintain or increase its present share of the consumer dollar." Other industries have long proved the correlation between increased advertising budgets and increased sales; they don't wait for sales to increase before increasing budgets, he said.

These were winners in the Tenth Annual Set-Up Box Promotional Competition, sponsored by National Paper Box Manufacturers Association. The awards were made at the Association's recent annual convention in New Orleans. Reading clockwise, starting at the upper right: Do-it-yourself kit for making a rug, Lily Mills Co.; towel gift box, Cannon Mills Co.; hosiery, Vanette Hosiery Mills; box-within-a-box holds yarn for making a carriage robe, Lily Mills Co.; brassiere, Jantzen, Inc.; towel gift box, West Point Mfg. Co.

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WARP TYING MACHINES

FOR

COTTON • WOOL • LINEN • WORSTED

MOHAIR • SILK • SYNTHETICS

SUITABLE MODELS FOR ALL CONDITIONS

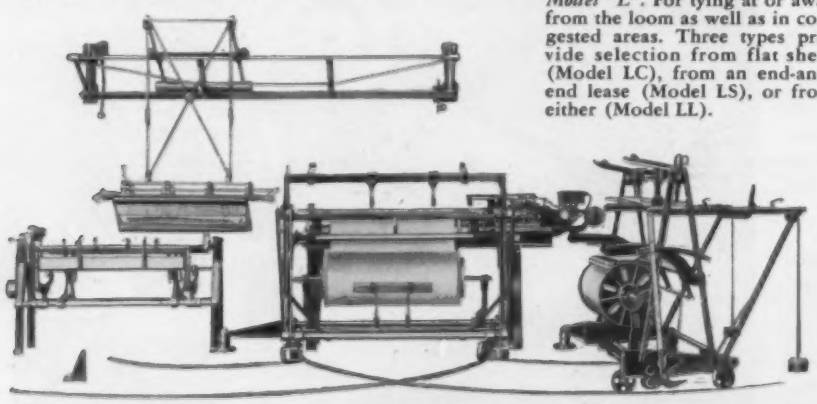
WIDE PORTABLE

Model "M". Available in 36" (915 mm) through 126" (3200 mm) maximum warp width capacity. Multiple frames permit advance loading. Three types provide different methods of selection.

ALL MODELS OPERATE UP TO 325 KNOTS PER MINUTE CONTROLLED BY VARIABLE SPEED MOTOR DRIVE

15" (380 MM) PORTABLE

Model "L". For tying at or away from the loom as well as in congested areas. Three types provide selection from flat sheet (Model LC), from an end-and-end lease (Model LS), or from either (Model LL).



STATIONARY

Model "EL". Designed for use in mills that concentrate on simple weaves. Available in 46" (1170 mm) through 116" (2950 mm) maximum warp width capacity. Tying ahead saves substantial down time at the loom. Selects from flat sheet only. For cotton and spun yarns.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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RECENT TECHNICAL AND COMMERCIAL DEVELOPMENTS

by J. B. Goldberg
Consultant to the Textile and Allied Industries
Exclusive

FIBERS AND YARNS

Solution-Dyed Synthetics. Eastman's Kodel and Beaunit's Vycron polyester fiber made available in spun-dyed black. Chemstrand, Ltd., offers Acrilan in England in 10 colors.

Metallic Yarn Standards. Metallic Yarn Institute establishes standards, specifications, and test methods for all types of metallic yarns. Specifications include yield, breaking strength, elongation, yield point, and color tolerance to light (gold and silver only).

Artifical Ripening of Cotton. Report experiments in artificial ripening of cotton in the U. S. S. R. indicate about a 10% increase in quantity of fiber in the bolls. Unripe bolls maintained at temperatures of from 30 - 35 C. Oil content of seeds said to be substantially increased at the same time. Estimate an area of 300 sq yd of heated premises required for about every 12 acres, but space could be reduced by putting unripe bolls on wire frames placed one above the other.

Japanese Fluorofiber. Daiwa Spinning Co., Japan, is reported to have developed a low-cost polyvinyl chloride-fluorine fiber, said to be somewhat similar to polyester fibers.

Avisco Microfibers. American Viscose Corp. will license patented process for making organic microfibers. Organic plastics such as vinyl, acrylic, nylon, and polyester resins, as well as amorphous materials such as asphalt, are melted in volatile solvents, then sprayed into an air stream to form superfine fibers (0.5 to 10 microns in diameter). During spraying, they may be mixed with other fibers such as rayon, and the mixture deposited on moving belt as random web. Fibers feature permanent electric charge and irregular length.

Japanese Polynosic Fiber. Recently exhibited at Osaka International Trade Fair were dress fabrics of "Tufcel" polynosic fiber. This modified cellulosic is apparently an improved version of the original Toramomen made in Japan many years ago.

Whiter Nylon. American Enka is producing a new nylon, "Blanc de Blancs," featuring a brighter white which eliminates the need for fabric bleaching. Initial use is for power net, circular knit, and foundation and lingerie fabrics.

Improved Silk Yarn. Shinyei Raw Silk Co., Ltd., Kobe, Japan, is reported to have developed process for resin-treating raw silk to impart softer hand, bulk, and resilience. Claim treated silk can be dyed before boil-off. Patents applied for in Japan.

MACHINERY AND PROCESSES

Yarn Texturising. Reported to have been developed in England is a new process operated by overfeeding by 20% a thermoplastic yarn through an elongated tank heater. Yarn then passes through a false-twist spindle, the bottom half of which rotates in one direction and the top half in the opposite direction, imparting "S" and "Z" twist simultaneously. Rapid cooling is achieved by passing yarn over a suction tube.

Single-Process Sizing and Dyeing. English concern said to have developed a single-process system for dyeing cotton, filament, and spun rayon yarns with semi-fast colors before weaving. Treatment is intended mainly for use with linings and interlinings. Processing time is no greater than that required for normal sizing.

New Yarn Crimper. Joseph Bancroft & Sons Co. introduced "Model 88" core crimper to permit package dyeing of "Textralized" filament yarn without loss of bulk. Expect machine will allow crimping of much wider variety of fibers and filaments.

Japanese Loom Development. Japanese National Textile Research Institute reports that modification of beating-up and shedding motions in regular automatic looms permit operating speeds of 300 picks per minute on 44" width goods. Shuttleless looms are now in the development stage.

French Card License to Whitin. Whitin Machine Works have been licensed to produce and sell new SACM "aerodynamic" card with claimed production of 50 lb/hr. Operating details have not been disclosed.

Measuring Sliver Production. Patent for device to measure amount of sliver produced by a cotton card has been issued to Charles D. Forney, Jr., Cleveland Mills Co., Lawndale, N. C.

FABRICS AND FINISHES

Low-Density Nonwoven Fabrics. Massachusetts concern is offering a new, low-density material which utilizes a combination of microfibers and textile fibers for filter material with pore size graded and controlled. Product has thermoplastic properties and can be heat-sealed, laminated, and heat-shaped.

Knotted Nets. An English manufacturer is producing a new knotted net loom for weaving nylon, Terylene, and other manmade yarns for fishing nets. Other fabric outlets being explored in-

a long array of years

For seventy-four years the Southern textile industry has relied upon Standard Oil lubricants to do a dependable protective job with maximum economy.

During this long array of years, we have pioneered in offering new lubricants to meet changing machinery, because the combined facilities for testing and research behind Standard Oil lubricants are unequaled. These facilities are available to tackle your problems whether they are "run of the mine" or involve a new or unusual lubricant application.

STANDARD OIL LUBRICANTS

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(KENTUCKY)

clude shopping bags, large net containers for transporting fruit and vegetables, curtains, and agricultural uses—e.g., for covering orchards.

Electric Perforation of Fabrics. Perforated Specialties Co. of New York has developed a new process which uses electric charge to perforate thermoplastic synthetic cloths as well as coated fabrics and plastic films to make them "breathable." Claim holes are sealed at edges to prevent threads from unraveling. Process expected to be important in treated linings, upholstery fabrics, and vinyl wall coverings (discouraging formation of moisture and mold).

Sheerest Nylon Hosiery. Exhibited at the British Nylon Fair was said to be the world's finest nylon hosiery, made of 6-denier Agilon yarn.

Soil-Retardant Finishes. Ciba "Antisoiling TC" treatment features ease of application, no effect on light or colorfastness, no dusting tendency and resistance to cleaning with detergents. Metro-Atlantic, Inc., is offering "Atco Finish SRF" as a new soil-resistant finish for carpeting. Product is anionic and possesses substantive properties to most fibers. Also claimed are good anti-static properties and easy application to rugs by spraying or impregnation from water solution.

Disposable Garments. New York distributor offering disposable side-vented garment of nonwoven material at price below cost of laundering. Dealer's cost is said to be 15¢ for a 44" length garment designed as a hospital examination gown. Other uses expected for lab workers, butchers, shop personnel, etc.

Polypropylene Felt. American Felt Company is producing polypropylene fiber felts under "Feutron" trademark. Featured are excellent chemical stability and physical properties.

Metal Roller Coating of Fabrics. German firm of Hans Zimmer has introduced a melt-roller process for applying thermoplastics to most flexible substances, using two internally heated rolls rotating in opposite directions. It is reported that most types of materials can be applied to fabrics of all fibers with no loss in plastics' properties from decomposition.

Removal of Glaze from Fabrics. Patented by the Du Pont Co. is a process for removing glaze impressed at below about 150 C from a fabric containing acrylic yarn. Fabric is subjected in relaxed condition to a temperature at least about the temperature of glaze impression and below fusing temperature for 120-180 seconds.

Wet Crease Recovery Testing. British Rayon Research Association has designed apparatus in which cloth is immersed in water, creased under desired weight, and recovery measured at intervals while sample is in tank.

PENSION and PROFIT-SHARING PLANS

TRUST COMPANY OF GEORGIA ATLANTA

. . . the bank serving businesses large and small since 1891

M-75 melamine finishes for wash & wear cottons and rayons are smooth, full-bodied. And they last! Even after laundering over and over again in alkaline or acid sour washes. The secret? This highly purified and stable monomeric resin doesn't just coat the fabric—it "joins" it, penetrating right into the fibers, staying there for the life of the fabric. For cottons and viscose, a Resloom M-75 finish means superior wrinkle recovery and excellent dimensional stability. For wools, shrinkage control. For nylon, durable stiffness and structural stability. **Write for technical data,** samples and expert finishing counsel, to Monsanto Chemical Company, Plastics Division, Room 719, Springfield 2, Massachusetts.

MONSANTO DESIGNER IN **PLASTICS**

Monsanto

Other Monsanto finishing agents include: Resloom E-63 chlorine-resistant resin; Resloom E-50 cyclic urea resin; Resloom HP melamine resin; Stymer sizes; AC Catalysts; Lytron polystyrene latices

EXECUTIVE VIEWS

Prepared by a man who is closely identified with the textile industry.

We buy more foreign machinery

ONE HUNDRED years ago very little textile machinery was manufactured in the United States and most of the mills being built in this country depended on English machinery. Seventy-five years ago there was a flourishing American textile machinery industry, and this developed rapidly as the South began to build cotton mills. Very little foreign machinery was ever installed in southern mills, but English machinery remained very popular in New England up until the time that the great liquidations started in the mid-Twenties.

A great many of the New England mills were staffed with Englishmen in key positions, and they naturally favored English machinery. Many of the largest mills in New England were equipped completely, or almost completely, with English machines. The southern mill man, on the other hand, was nearly always a home grown product; he knew nothing about English machinery except that it was made a long way from his plant.

So foreign machinery never became popular in the South and the tremendous development of the textile industry in the South led to a steady growth of the American textile machinery business, and this growth continued until the tremendous liquidations in New England set in. At that time the American textile machinery industry began to shrink rather than expand. For some 15 or 20 years there were practically no revolving flat cards manufactured in the United States, and relatively few roving frames or drawing frames.

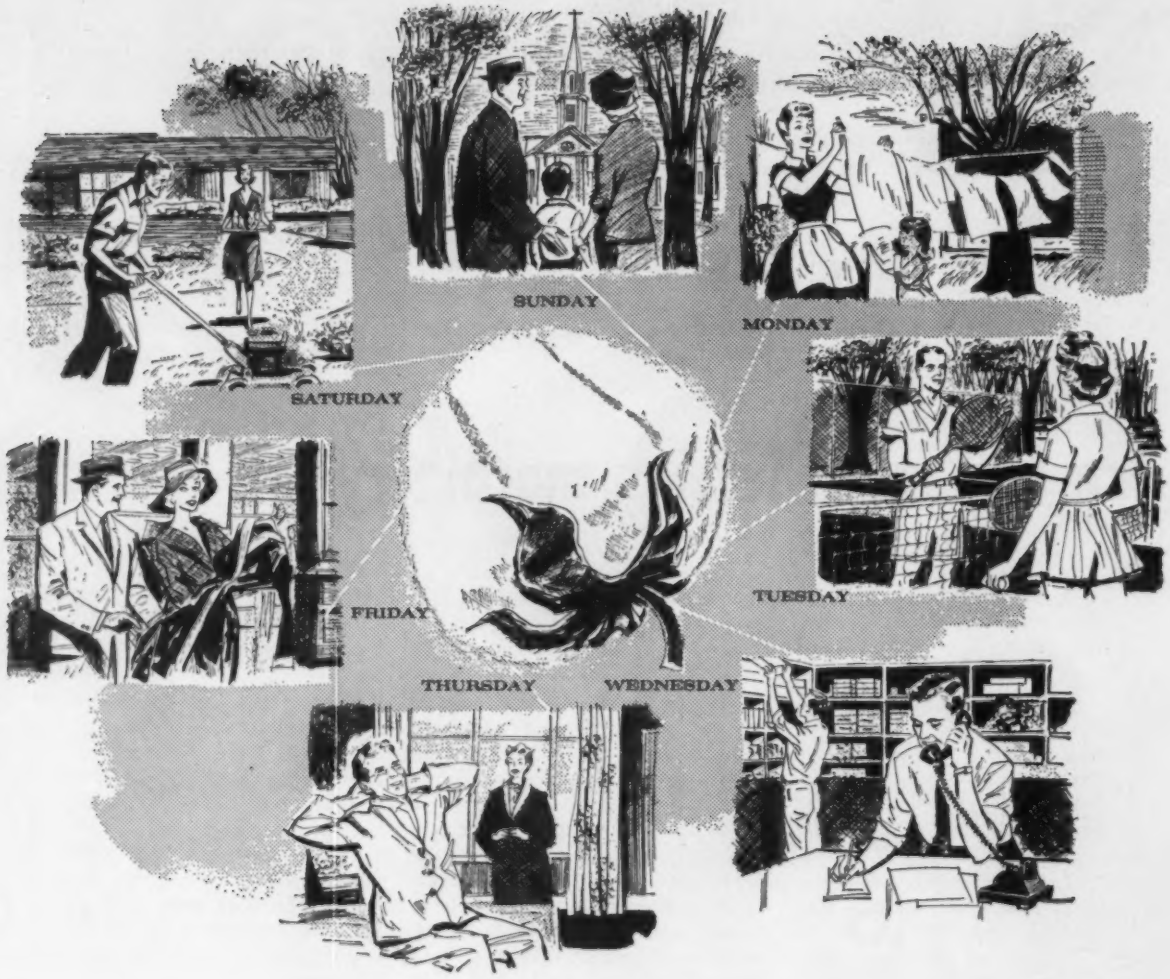
TO TRY to compete with this flood of good used machinery, the American textile machinery manufacturers made valiant efforts to develop new and improved equipment which would appeal to textile mill management, and they were very successful in this respect. For a good many years American textile machinery has generally been considered superior to foreign machinery, and there has been a great amount of American machinery shipped abroad. For the past few years, however, it has seemed that we are pricing ourselves out of the foreign machinery business very rapidly, and inviting competition again from abroad.

A great many English cards have been imported to the United States, and there has lately been a good deal of interest in certain specialized foreign machinery, and maybe the pendulum is swinging back again and we will see an increasing amount of foreign machinery imported.

For years, American machinery in all industries has been more and more aimed at saving labor and cutting costs, and in England and on the Continent powerful labor unions have so completely controlled manufacturing processes that they could prevent the widespread installation of labor saving machinery. We have seen the same thing in this country when the unions wrecked New England rather than adopt realistic work loads and accept as inevitable the use of labor saving machinery. Fall River, with over four million spindles, foundered on the rock of eight looms to a weaver, and proportionate loads in other departments.

This situation has been common in England, but we hear that it is being remedied; and of course if the barriers are broken down so that English mills can force their unions to let them operate efficiently, the English machinery

"The Industrial Revolution began in England, but we took it over and developed it far more rapidly than any other country. Maybe the Europeans are now ready to take it back from us, and with the wholehearted support of our labor racketeers they probably can do it."



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manufacturers will have just as much incentive to develop labor saving equipment as we have in this country. And that is going to make competition tougher for American manufacturers who have to pay from three to four times the wages that the English manufacturers pay.

ONE THING that has helped somewhat to equalize textile machinery prices has been the greater efficiency of American plants as compared with European plants. While the American workman made three or four times as much money per hour as his European or English counterpart, he would accept the use of improved machinery to a greater extent than these foreign workmen, and could therefore narrow the gap between what it cost to make machinery with low-priced labor as compared with high-priced workers.

We have heard a good many accounts of great improvements in foreign manufacturing plants, and understand that many of these are well equipped as any American plant and that they are rapidly going to automation in its advanced stages. If this is the case, then the American machinery manufacturers, both in the textile industry and out of it, are going to have more and more competition from foreign producers who can so drastically undersell the American manufacturers.

A revolving flat card, for example, from England costs some 60 or 70 per cent of the cost of an American-made card delivered at the mill. The card is a good example of the fantastic increase in American textile machinery prices during the last 50 years. In 1910 a cotton card listed for $425, and if somebody wanted to build a fair-sized mill and give one concern the order for all of the machinery, he could buy the cards for $400. Card prices today are more than 10 times what they were 50 years ago, and the cards are made almost exactly like they were at that time.

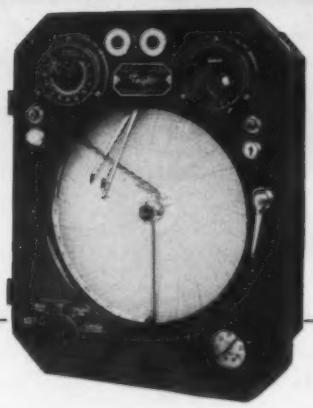
THE INCREASE in the price of spinning frames is even more fabulous. In 1910, spinning was listed at $2.25 a spindle, and could be bought for $2. Today a spinning frame will run around $55 to $60 a spindle, but of course these are not the same spinning frames that were being built in 1910, and some allowance has to be made for improvements in design and construction. Practically nothing has been changed about the cards except the price.

During the recent steel strike, large quantities of European steel were imported, and there is every reason to believe that more and more European steel will appear in the United States unless higher tariffs are imposed, and the tendency is constantly to lower rather than higher tariffs. It was stated during this steel strike that European steel can be laid down in New York for 20 to 30 per cent less than American steel. It has been stated that European producers have made heavy inroads on the American production of barbed wire, nails, and other steel specialties. When the inflationary effects of the steel strike settlement begin to appear this summer

Continued on page 125

FUTURE EVENTS

Date		Event	Location
June	3-4	Piedmont Section AATCC outing	Ocean Forest Hotel Myrtle Beach, S. C.
	10-12	Southeastern Section AATCC outing	Radium Springs Lodge Radium Springs, Ga.
	18	Mid-West Section AATCC outing	Brown's Lake Burlington, Wis.
	23-25	Southern Textile Association annual meeting	Grove Park Inn Asheville, N. C.
	24	Rhode Island Section AATCC outing	Metacomet Country Club E. Providence, R. I.
Sept.	8-9	Combed Yarn Spinners Association	The Cloister Sea Island, Ga.
	8-9	Textile Quality Control Association	Clemson House Clemson, S. C.
	9	Northern New England Section AATCC	Wachusett Country Club West Boylston, Mass.
	10	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
	14-17	Southeastern Maintenance & Engineering Show	State Fair Arena Raleigh, N. C.
	15-16	Textile Processing Symposium, American Gas Association	Sedgefield Inn Greensboro, N. C.
	15-16	Chattanooga Yarn Association outing	The Read House Chattanooga, Tenn.
	17-21	National Safety Congress	Conrad Hilton Chicago, Ill.
	18-19	Institute of Textile Technology technical advisory committee and board of trustees	I.T.T. Charlottesville, Va.
	28-30	North Carolina Textile Manufacturers Association meeting	The Carolina Pinehurst, N. C.
	28-29	Chemical Finishing Conference	Statler Hotel Washington, D. C.
Oct.	3-7	Southern Textile Exposition	Textile Hall Greenville, S. C.
	6-8	AATCC national convention	Sheraton Hotel Philadelphia, Pa.
	19-22	Carded Yarn Association annual meeting	Grove Park Inn Asheville, N. C.
	22	Textile Operating Executives of Georgia slashing and weaving discussion	Georgia Tech Atlanta, Ga.
Nov.	12	Textile Education Foundation Inc.	Georgia Tech Atlanta, Ga.
	12	Alabama Textile Operating Executives carding and spinning discussion	Thach Auditorium Auburn, Ala.



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2. Reduced operating costs because of no chance of human error.
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Whether they're dyeing collar cloth, men's wear or flannel goods, Carleton find that the FULFLEX Controller gives them maximum adjustability for any cycle. It also embodies the qualities of dependability, long life and ease of maintenance that have made Taylor instruments so popular in the textile industry. Ask your Taylor Field Engineer—or write for **Bulletin 98339.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ont.

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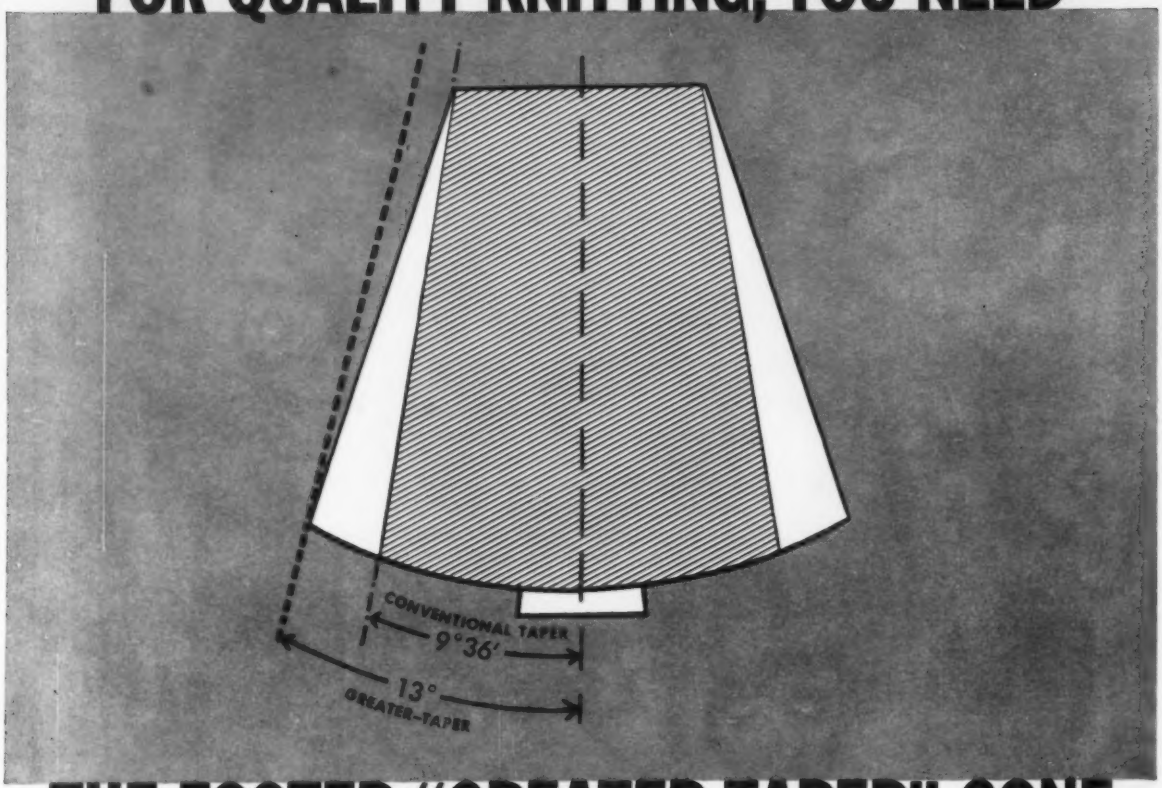


THE FOSTER "GREATER-TAPER" CONE

OTHER ADVANTAGES OF MODEL 102

1. Convex base of cone also prevents snags.
2. Highly efficient slub catchers automatically inspect yarns.
3. Ribbon breaker prevents ribbon wind.
4. Idler shell on winding drum prevents chafing.
5. Doubles production and reduces operating costs ⅓ over obsolete machines.
6. Repair costs as low as $10 per year per 100 spindles.
7. Yarn conditioning attachment if desired.

Tight stitches, in a knitted fabric, caused by snags, do not make for quality merchandise.

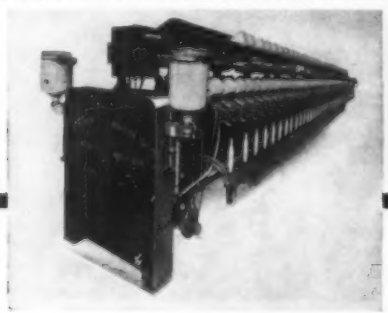
You can eliminate or minimize tight stitches by using a cone that permits the yarn to clear the nose on its way to the needle, even when the cone is full.

The Foster Model 102 "Greater-Taper" Cone does just this, because, although starting out with a 9° 36′ taper, it ends up with a 13° taper.

If you spin sales yarn for knitting, use the Foster Model 102 winder to give knitters the cone they need. If you wind cones in your own plant, the Foster Model 102 will give you cones that your knitting machines need.

Bulletin A-95-A on request

THE FOSTER MODEL 102 WITH YARN CONDITIONING ATTACHMENT



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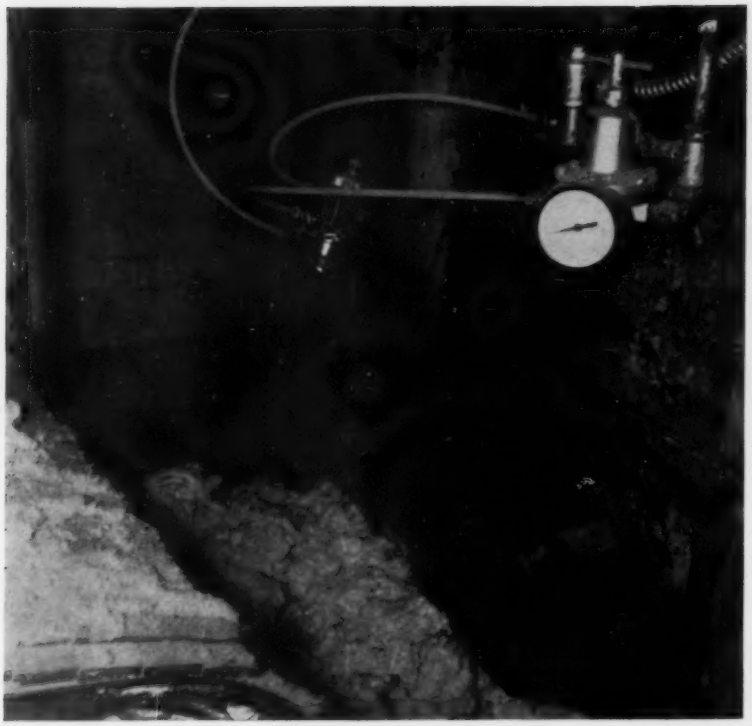
Textile Industries
FOR JUNE 1960



FIBER ADDITIVES

Results some mills are getting with the colloidal silica compounds, where they apply them, and quantities used

They offer some real advantages now, and they should improve with continued research

Staff prepared Exclusive

COLLOIDAL SILICA may be prepared in a number of ways to add friction to a fiber by coating it with silica particles. Also, it may be formulated to recondition over-dried cotton fibers; to kill static on such diverse fibers as wool, rayon, and the hydrophobics; and to improve cotton's moisture regain. Thus a specific silica compound must be purchased to do a limited number of specific jobs—there is no single compound that will do all of them.

A limited survey of plants using the silica compounds as fiber additives has been made by TI editors and here are the results of that survey. But we consider the findings just the beginnings, for too many vital questions are still unanswered. For example:

What is the long-range effect to be on cots, rolls, bearings? What correlation is there between the amount fed and the severity of the loading problem? Between loading and relative humidity? Temperature? Can the gumming reported here and there on rolls be overcome? What really is the best method of application? The list could go on endlessly.

Despite the unanswered questions, a summary of sorts is possible—the additives do bring about an increase in fiber friction; increase web, sliver, roving, and yarn strength; bring about a decrease in fly and certain other wastes; decrease spinning ends down; and preserve or improve uniformity.

But it is necessary to include in such a summary that the evidence —although predominantly in favor of the above—was not all one-sided. Some plants use it without noticeable improvement in spinning or in breaking strength; some have abandoned it because it causes card clothing to load; some have never tried it nor any other additive and are not interested in beginning.

Why should two plants, operating essentially on the same grade and staple and producing the same class of goods experience opposite reactions? Why does one executive state that it keeps his ends up in spinning while another affirms that it causes his to break back?

Where They are Introduced. Usually the additives are sprayed into the processing lines as near the opening process as is possible. But the choice as to whether to introduce the compound at the opening room feeder, opening room feed table, picker hopper, picker room overflow—all such places are being used—is, as one would expect, largely a local one. It really doesn't matter, for there is special spray equipment that can very well be depended on to discharge the liquid in just about any quantity, anywhere, and at any angle.

The compounds sometimes cause "loading" of various machine parts that must contact the still-wet fiber. Such parts include hoppers, lift aprons, and condensers. But the usual correction for loading is

simply to reduce the quantity until loading ceases. In at least one case, however, the picker hopper lift aprons are cleaned about once per month with the quantity being maintained because of its benefit to later processes.

Quantities Used. Although the range is from 0.1 per cent to 2.0 per cent (based on weight of stock), the average is more like 0.5 per cent. The smaller quantity seems to be adequate while keeping "wetting down" under control. It must be pointed out though that the quantity, even if large amounts of it could be used without a loading problem, can cause a deterioration in breaking strength.

This seeming paradox is explained by the nature of the collodial silica, which can build up on fibers to a point where fiber slippage becomes nil. When this condition is reached, fibers break rather than slip enough to distribute the load over all fibers in the cross sections. And from this failure of one fiber at a time comes the loss in break factor.

Cards have loaded heavily when the quantities get "out of control" —this may mean a quantity greater than 0.1 per cent—but since cards will load now and then without being near an additive it is best to assume that loading is a problem that must be worked out locally. Here and there one runs into a little loading or accumulation on slubber rolls.

It is this cylinder loading that brought forth a rather bitter note from a couple of sources. One of the plants involved produces osnaburgs from a short-fiber mix, a situation seemingly made to order for additives that create stronger webs, slivers, and yarns.

The superintendents who expressed dissatisfaction were specific in their criticisms. Both said their cards loaded badly, that the agent they had used amounted to plant-size headaches.

One of the superintendents went a step further with: "We bought the stuff to do a specific job, to help us with our yarn strength. Then it loaded our cards so badly we had to abandon it. While it did seem to bring about a reduction in fly, it seems we were 'sold' a commodity that is too tricky for general use and were left to work out all the trying details. Perhaps with a proper technical force to back up the salesmen, the stuff could be made do the job it is intended for. But we seemed to be abandoned as soon as the sale was made. . ."

Loading also seems related to humidity, with one firm observing that loading is worst on muggy days. The mill applies 1.5 per cent.

Fly Reduction. All things being equal, the compounds reduce the over-all quantity of fly, although it may be more noticeably reduced at some processes than at others. Apparently this can become an axiom, since mills using all fiber lengths and cotton grades—from part-waste mixes to combing stock —report overwhelmingly that fly is reduced.

Following the combing operation in one plant—which, incidentally found the combers removed about one per cent less of the treated stock—there was a marked decrease in the fly build-up around drawing trumpets. It might be added that this firm noticed less fly on the cards operating on treated stock that was visible on the machines containing control stock. Uniformity at all phases was improved or held its own creditably.

Breaking Strength-Yarn Counts. One meets a paradox here, for some of the plants that report a reduction in fly (and which use adequate amounts of the additive) find little or no increase in breaking strength. One firm suffered a 60-point loss in break factor and an increase in ends down in spinning.

But the balance of the data supports an upswing in breaking strength. Perhaps the diligence with which tests were carried out explains some of the differences in opinion. As all mill men know, enthusiasm (or the lack of it) can make or break a particular test or "check out." Diverging aims, too, must be considered, for mill men are likely to buy the same products to meet different end requirements.

One textile executive we interviewed produces soft-twist carpet yarns, uses several pure synthetic mixes as well as a variety of blends. His sole purpose in buying the silica additive is for the "boost" it gives his spinning.

"If we withdrew it now," he stated, "we would first feel it in the great number of ends down we would have in spinning." He added, "I don't give a hoot about its keeping dust and fly subdued— we don't even study those elements."

His yarns go largely into bath mats and scatter rugs, and the compound in no way interferes with dyeing and finishing.

In a case or two, an increase in package weight came about from the hygroscopic nature of the additive used. One was significant, with carton weights rising from a 253-pound average to a 263-pound average.

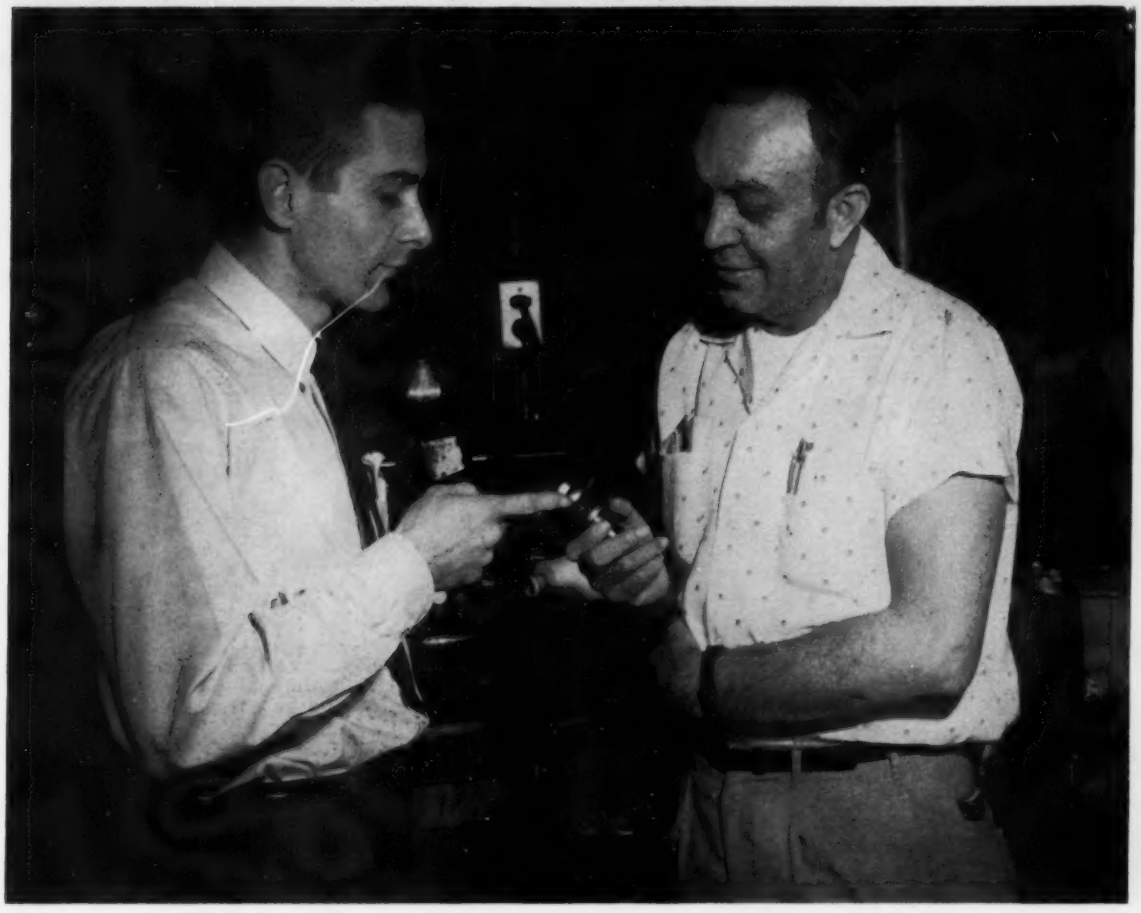
Less fiber used for industrial purposes

■ THE INDUSTRIAL uses of cotton, wool, and man-made fibers consumed a total of 1,163,000,000 pounds in 1958, considerably less than the average of 1,391,000,000 pounds consumed in 1949-1950, a report by Textile Economics Bureau, Inc., states.

In this category, consumption of cotton fell from 951,000,000 to 624,000,000 pounds, with its percentage of the field falling from 68.4 to 53.6 per cent. Wool usage declined from an average of 79,000,000 pounds in 1958, and its percentage of total fibers declined from 5.6 to 2.6 per cent. Man-made fiber consumption for industrial uses, on the other hand, rose from an average of 361,000,000 pounds in the earlier period to 509,000,000 pounds in 1958 and increased its percentage of the field from 26.0 to 43.8 per cent.

The significant gains for man-made fibers in the industrial uses were said to be in tires, transportation upholstery, hose, belting, electrical applications, felts, and filtration materials.

Charles Stone, left, and Jake Devall display the adjustable end finder pulley they developed and which has reduced winder waste.



War saves money?

Yes, if it's a "War on Waste" like Woodside Mills' employees are fighting

Staff prepared Exclusive

WOODSIDE MILLS' 1960 W-O-W (War On Waste) program is a success at the Simpsonville, S. C., plant. The campaign is definite, well coordinated, and has produced tangible results in waste reduction.

Through the close cooperation of all employees and supervisors, there has been an impressive 57 per cent reduction in waste during the past 10 years at this Woodside plant. The reduction can be translated into large savings in efficiency, money, labor, production, and job security.

This is a brief outline of how the waste is controlled: Waste committees, composed of section men and fixers, meet each week and study waste reports to see what can be done to further eliminate waste. Waste studies also are made at the weekly meetings of overseers.

Typical of the interest in waste reduction is a waste-saving device invented by Jake Devall and Charles Stone. The waste-saver is an adjustable end-finding-roll pulley on the automatic winders.

Another innovation in this plant is a guide that keeps thread under proper tension on Unifil units. Both of these devices reduce waste and improve quality and production.

Wall graphs throughout the mill in all departments give visual evidence of the progress in waste control. In the weaving department, cone racks were put into use, effecting a reduction in the handling of cones, which means less

Curtis Barbrey avoids damaging cloth by cutting it with scissors as he doffs it. Knives, harder to control, often cause waste.

Cone racks reduce yarn handling, cut into waste from that source. Earl Godfrey wheels load of filling consigned to loom winders.

damage and waste.

Scissors are used to cut cloth rolls when doffed, and this procedure eliminates cloth damage which often occurred when knives were used for this purpose.

The W-O-W program is constantly stressed in the weekly bulletins posted on bulletin boards, thereby keeping the operatives on their toes and waste conscious.

Personnel at Simpsonville realize the close relationship between good housekeeping and waste control. An award is made weekly to the department with the best housekeeping record, and competition is keen among the departments.

Based on a story appearing in the *Woodside Chain News.*

Tips for initiating a cost reduction program in the mill

by Roy M. Barnes
Manager, Sales Promotion
E. I. du Pont de Nemours & Co., Inc.

Abstract*

■ THE KEY to the success of a plant cost reduction program lies in developing cost consciousness in the minds of all the employees—not just supervision and management.

The initial step in setting up the cost reduction program is the sincere belief on the part of management that they must start and sustain the entire program. Naturally, check lists must be devised to ferret sources of possible cost reductions.

Next, it is necessary to establish dollar goals. Reduction of operation costs over a 12-month period may be arrived at more realistically by giving complete cost data on unit operation to supervision.

Basic ground rules which are established to eliminate the problem of unfair practices are:

1. There will be no sacrifice of quality for any cost reduction.

2. The establishment of the 12-month limit. The 12-month limit is to stimulate employees to be continually alert to new ideas and to take advantage of the new ideas, not only for their own benefit, but for the benefit of the company.

3. Cost reductions must be proven and calculated to be applied to the dollar goals.

The whole cost reduction program is held together by a Cost Reduction Coordinator. He has no command function and acts as a consultant to management. The cost reduction coordinator is responsible for the training of members of the supervision in the work simplification technique. He also handles the operation of the suggestion plan which is open to all employees of the company.

The coordinator, in order to promote and maintain interest and to stimulate cost reduction suggestions, uses posters, the plant newspaper, plant made films, talks at area meetings, and a yearly plant cost reduction show or plant open house.

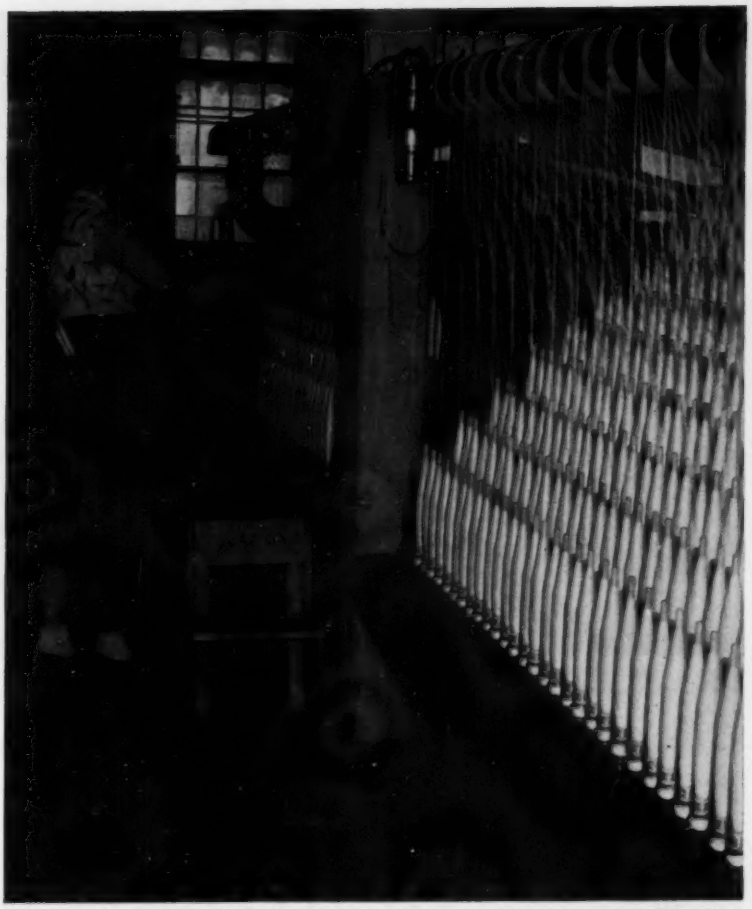
The cost reduction show allows each member of the plant who has contributed a valid cost reduction suggestion, to exhibit his suggestion and show how it has contributed to the cost reduction program.

The underlying principle which we feel contributes to the success of the cost reduction program is mass motivation.

*From paper presented during the recent Atlanta, Ga., meeting of the Textile Quality Control Association.

Tips for employee training

"One of the supervisor's biggest tasks is that of training new employees . . . and his success as a supervisor depends on how well he teaches"



When a learner masters the fundamentals of a job, assign him or her some of the load.

by Carl West
Exclusive

THE NEVER-ENDING job of training personnel can and should be set up on a regular schedule. And while the employee being trained must be taught his assigned task, it must be remembered that he or she also must learn company rules, policies, and regulations.

In general, the training program will be concerned with: (1) training new employees; (2) training employees for higher jobs; and (3) retraining employees in new skills and techniques.

Many supervisors dislike the training chore and delegate it to someone else. Such a course is fine if the one chosen to do the training is qualified for the task.

Too often the learner will be assigned as a helper to the poorest producer in the mill. The learner will help run the job but he will also pick up all the bad work habits and unproductive traits of his teacher.

I once assigned a sweeper to teach a new employee his job. About an hour later I went to see how he was getting along. I didn't find them on the job but met them as I was returning to the office.

"How is he doing?" I asked the sweeper.

"Just fine," he replied, "I've shown him where to eat and now I'm going to show him where to smoke!"

One hour on the job and he'd already been taught how to kill time!

A good way to train new employees is to "put them on their own" as soon as possible. When the learner grasps the fundamentals of the job, give him a part of it to run. Watch him and correct his mistakes before they become a habit.

For instance, if you are training a new spinner, give her a frame to run as soon as she learns to put up an end correctly. Teach her the other spinning tasks gradually while she is gaining skill and confidence on the job. Increase the work load as rapidly as it is possible for you to do it.

Teach Best Use of Time and Energy. Some production workers never become as efficient as they should because they were not "pushed" while learning and were allowed to settle into a slow gait that became a rut. If not given plenty to do and taught to make the best use of their time and energy, the learners will often de-

Make regular follow-ups to see that the learner is making progress and is not developing any bad work habits that must be unlearned.

Any change in operation may require retraining the operative—a battery filler changing from filling boxes to carts must adjust.

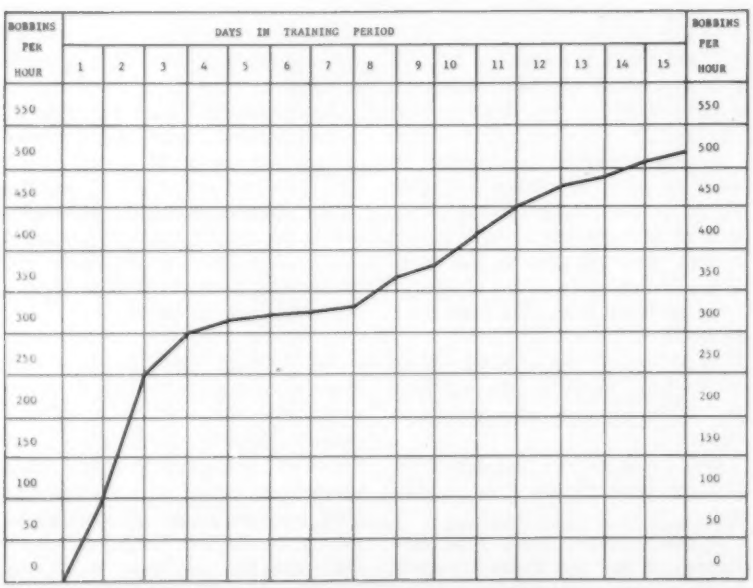
velop bad work habits.

Such a one was an experienced battery hand I once knew. She had been filling batteries for years but always had trouble keeping the batteries filled. She was moved from job to job and finally was checked to see what was wrong. The answer to her problem was simple.

When learning, she had developed a habit of taking a bobbin from the hopper with her right hand, transferring it to her left hand while unwinding a length of filling, and then switching the bobbin back to the right hand to plug it in the battery.

Changing the bobbin back and forth from one hand to the other took a lot of time and energy. It took at least one-third more time to plug each bobbin and she was twice as tired at the end of the day as she should be.

But the sad part of the story is that after being shown what she was doing wrong she wouldn't change. Her method had become such a fixed habit that she was convinced that she couldn't fill batteries any other way. She was finally laid off due to incompetency.



Progress chart taken from the case history of a battery filler-learner. Note plateaus.

Expect Learning Plateaus. A learner does not learn at a regular progressive rate from day to day. A graph will show that proficiency increases rapidly at first and then tapers off and increases gradually in staggered steps.

Coach the learner but don't nag or scold when he seems slow to catch on. Many times the one who seems quick to learn can only progress to a certain point, whereas the slow starter sometimes keeps going and makes the more productive worker.

When an employee is being

trained for a better job or for a different type of work, he often presents a bigger problem than the untrained beginner. Sometimes the experienced employee has to unlearn some of the things he already knows.

A good example of this is the loomfixer trained on E-model looms who is changed to a section of high-speed looms. Many of these fixers never learn to fix the new looms because they persist in using slow loom methods on the high-speed looms — methods that just won't work.

Another hard training job is that of teaching a machine fixer to be a supervisor. The majority of them spend more time with the machines than they do with the personnel. It is hard for an ex-fixer to pass up a chance to work on an ailing machine when he knows he can fix it himself easier than he can tell someone else how to do it.

Beware One Year's Experience 20 Times. But don't take it for granted that an employee knows the best way to run a job just because he has been on it for a long time. We once increased loom production two per cent by retraining all the weavers on the three shifts.

A good weaver was selected to be the instructor and he was given a short course in the best weaving methods. He started at one end of the mill and stayed with each weaver in turn until he was satisfied that the weaver was running his job in the best possible manner.

Retraining is often necessary when some part of the job is changed. For instance, a changeover from cotton to rayon or vice versa will call for slightly different methods, although the operation as a whole will remain unchanged.

Training and retraining is an important part of a mill's operations. It is short-sighted economy to try cheap or unproved training methods. A potentially good production worker can be lost through inadequate methods. Once a worker has been trained, regardless of how wrong and slip-shod the method, it is hard to change his work habits.

One of the supervisor's biggest tasks is that of training new employees and retraining old ones (he can delegate a part of this work to others but not the responsibility), and his success as a supervisor depends on how well he teaches.

3-stage plan for changeover to tex yarn numbering system proposed

■ A PLAN for the orderly introduction of the single system of numbering yarns made from all types of fibers—the tex* system—is being introduced to the textile industry in most countries of the world, according to information contained in a pamphlet** published recently by the American Society for Testing Materials. United States participation in the plan is urged.

The tex system was chosen to replace the many conflicting systems now used, ASTM explained, after extended study by the Technical Committee on Textiles of the International Organization for Standardization (ISO/TC 38). Delegates representing the textile industries of 21 nations (including the U. S.) and four international textile associations participated in the study and unanimously adopted this proposal.

Three Stages of Action. It is proposed to make the changeover in three easy stages over a period of years. The first stage is to start in 1960 and run until the trade is thoroughly familiar with the new system. Dates for the second and third stages will be set when the trade becomes ready for them.

FIRST STAGE. This stage is designed to familiarize everyone working in the textile industry with tex numbers. The existing yarn count systems will continue in use, but a corresponding rounded tex number will be given in parentheses after the traditional yarn count or yarn number—for example: 18 cotton count (32 tex), 48 worsted count (18 tex), 100 denier (11 tex).

During this stage the rounded tex numbers in parentheses are illustrative or explanatory and have no legal standing. They cannot be used as the basis of claims or other disputes, which must be based on the traditional yarn numbers. A note to this effect may be stamped on contracts or other documents where this is felt to be desirable.

SECOND STAGE. Commercial transactions and manufacturing operations will be shifted to tex numbering. The equivalent traditional yarn number or count will be given in parentheses after the tex number —for example: 32 tex cotton yarn will be written 32 tex (18.5 cotton count); 18 tex worsted yarn will be written 18 tex (48 worsted count).

THIRD STAGE. The traditional yarn number in parentheses will be deleted; only tex numbers will be given.

Action To Be Taken Now. In view of the benefits to be derived from the general use of a single yarn numbering system throughout the industry, all textile trade associations are urged to endorse the plan for introduction of the tex system and to recommend participation in it by their members. Manufacturers, distributors, testing and research laboratories, and individuals throughout the industry are urged to give rounded equivalent tex numbers in parentheses following the traditional numbers or counts wherever they appear on orders, invoices, tags, reports, in trade literature, and in technical publications.

The rounded tex numbers can be obtained readily from short tables relating them to the numbers or counts in the system now used. Condensed tables are appended to the ASTM pamphlet for cottons, worsted, woolen, and denier numbers or counts, with directions for their use.

NEXT MONTH

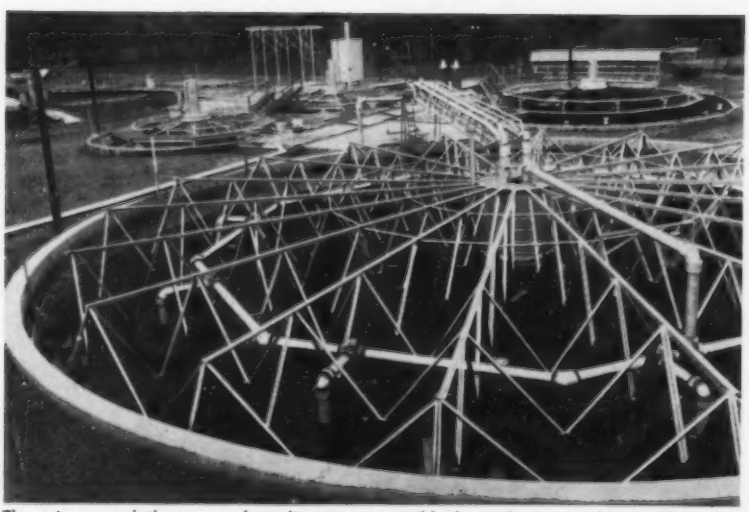
Special staff report of the American Textile Machinery Exhibition

*See "Tex—A Universal Yarn Numbering System," by L. Szponder, TEXTILE INDUSTRIES for April, 1958, p. 149, 151.

**"Introduction of the Tex System for Designation of Yarn Number," American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

This lagoon holds caustic liquor which is fed around the clock into the disposal system.

Foreground, first stage filter; right, primary storage tanks; left, second stage filters.



The primary and three secondary digesters are visible here. Gases are drawn off primary.

"What we

by John L. Brown, Jr.*
Sanitary Engineer
Cannon Mills Co.

THE PROBLEM of waste treatment was neglected by the textile industry for many years. This basic policy was in effect because there were no federal or state laws concerning pollution of streams except where the public health was involved.

In general, textile wastes were dumped directly into streams, and dilution provided the only treatment. On small streams where the dilution was not adequate, the mills usually paid damages to property owners adjacent to the streams.

In many cases, the mills actually purchased the water rights on these small streams to permanently remedy the damage. This method of disposal of textile wastes was satisfactory from both the legal and public standpoint.

Pollution Control Regulations. The tremendous growth of our country and the increasing demand for water gradually changed the picture. We now have a federal law controlling stream pollution. This law leaves the power of enforcement to the states, but in case a state does not assume the responsibility, the federal government has authority to issue corrective orders.

Most states have now adopted laws on pollution control and many of them have very effective programs today. North Carolina adopted its pollution control law

*The author is noted for his pioneering approach to textile waste treatment and is recognized as an expert in this relatively unexplored field. He was awarded the William D. Hatfield award in recognition of outstanding performance in works operations, management, and advancement of knowledge in the field of sewage and industrial waste. This article is from a paper presented by Mr. Brown at the recent Raleigh, N. C., meeting of the Textile Division, American Society of Mechanical Engineers.

did about waste treatment"

At Kannapolis, N. C., Cannon Mills Co. had the problem of disposing of domestic sewage from the mills and mill village, as well as certain textile processing wastes from the wet processing plant and slasher rooms. Here is the way the problem was solved.

in 1951 and has administered the law well.

After the passage of the North Carolina law, the management of the author's company realized that a new policy on waste treatment was necessary. It was decided that cooperation with the state enforcement agency and voluntary abatement of pollution was the best policy.

With the adoption of the new policy our next problem was "what to do about it?" There was information available on treatment of textile wastes, but all methods advanced were very expensive and did not completely solve our problem.

We then decided that a complete study of our waste problem was necessary and embarked on this program in the spring of 1952. This study continued for two years and our present method of waste treatment is based on the results of this study.

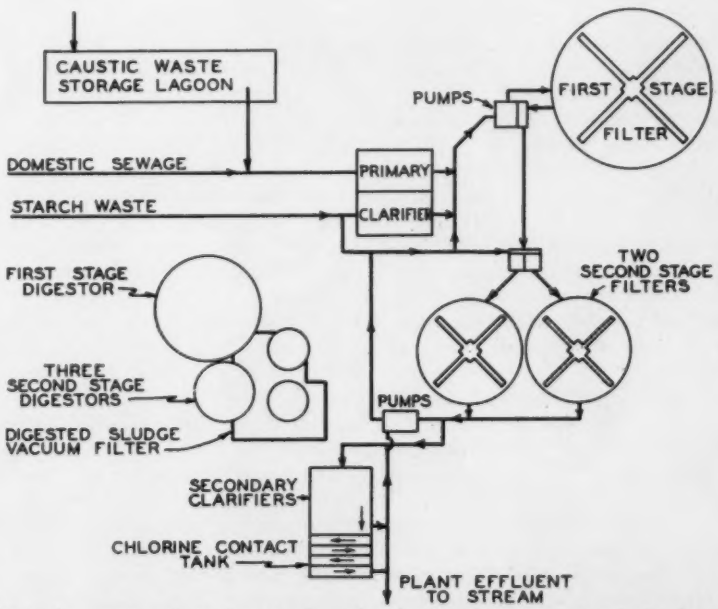
Types of Waste to be Treated. The waste that requires treating at Kannapolis consists of domestic sewage from the mills and mill village and certain selected wastes from the bleachery and slasher rooms. A brief description of the waste produced in our bleachery and dyehouse will be helpful and will indicate why we treat only a selected part of our industrial waste. The wastes from the bleachery are derived from continuous peroxide bleaching ranges. The first two steps in this process produce the troublesome wastes.

The first step is the desizing operation and the waste produced is chiefly starch. This waste has a very high BOD* and is slightly acid. It ferments rapidly and cannot be stored for any great length of time.

The second step is the cleaning operation in which a three-percent caustic solution is the chief cleaning agent. This waste also has a high BOD and is very highly alkaline.

However, it is very stable and can be stored for long periods. This storage is also beneficial in the treatment since most of the hydroxide alkalinity is reduced to the carbonate or bicarbonate during the period the waste is in storage.

The third step is the bleaching operation in which peroxide is the bleaching agent. The waste pro-



Only the caustic and starch wastes from the bleachery are processed with the domestic sewage. The caustic portion can be stored for a long time and is kept in a lagoon and is fed into the system continuously, keeping pH fairly constant. The starch waste decomposes readily and is therefore processed immediately in primary clarifiers separated from the ones receiving the domestic sewage. The digesters are connected to the system through a maze of pipe lines not shown and are so connected that: (1) sludge may be pumped to the first stage digester from the primary clarifiers; (2) from the first stage digester to the second stage digesters—on alternate days the first stage digester discharges into one of the second stage digesters; (3) from each second stage digester back to the primary clarifier; and (4) supernatant from each second stage digester can be returned to the primary digester.

*Biochemical oxygen demand—oxygen required in the decomposition of waste and which will be taken from the water into which waste is dumped. Since BOD is considered a criterion of the strength of waste and its power to damage a stream used for potable waters or for fishing, it is an important measure; to a degree it indicates the type and extent of treatment necessary to reduce the waste's oxygen-absorbing power sufficiently to prevent its damaging a stream.—The Editors

duced is harmless from a pollution standpoint.

The other operations in the bleachery produce very limited amounts of waste and are of little importance in so far as pollution is concerned. The wastes produced by the dyehouse are also of minor importance except for color in regard to downstream pollution.

Cannon Mills produces in the range of 20,000-30,000 pounds* of BOD per day in plant. The approximate cost of removing 1000 pounds of BOD in this instance is about $20.00. The approximate cost per million gallons treated in the summer months is $30.00 for labor, power, and chemicals.

Certain soaps and detergents present less trouble and produce less BOD than others. Cannon Mills' personnel keep pollution problems in mind and evaluate for BOD all products used in dyeing and finishing operations.

The results of the two-year study on our waste showed that 90 per cent of the total BOD being discharged was in the wastes from the first two steps in our bleachery. These same two wastes contained 66 per cent of the total alkalinity being released. The volume of these two wastes represented only 35 per cent of the total waste being discharged.

It was decided, with the approval of the Stream Sanitation Committee, to concentrate our efforts on these two wastes. We felt that if these wastes could be treated successfully the receiving stream would be greatly improved. The remaining wastes would be by-passed for the present, and the size of the treatment plant could be reduced. The treatment plant could be enlarged in the future to treat all of the waste if we were successful in this phase of the treatment.

Common Waste Disposal System. Laboratory studies indicated that biological treatment of these two selected wastes in conjunction with domestic sewage was possible. We decided to use the existing domestic sewage plant to determine on a plant scale just what effect these wastes would have on the operation of the plant. We made connections to the domestic sewer system from the drains on several units in the bleachery and operated the sewage-treatment plant for a number of months on various combinations of wastes. The final treatment method evolved from these trial operations.

From this plant-scale operation it was evident that the best treatment could be effected if the wastes were segregated at the bleachery and then transported to the treatment plant in separate pipe lines.

The starch waste was to be treated immediately on arrival at the plant. The caustic waste was to be stored in a lagoon and treated on a 7-day basis. The caustic would then give us a means of continuous pH control. A high pH was necessary in order to retard the fermentation of the starch wastes.

The Waste-Treatment Facility The waste-treatment plant in operation at Kannapolis consists of the following units: A caustic storage lagoon, primary clarifiers, trickling filters, secondary clarifiers, chlorine contact tank, sludge digesters, and vacuum filtration of sludge.

The plant was designed and built by the engineering department of the author's company. It was completed in June 1956 and has been in operation since that date. During the past three years we have made three important changes in our treatment plant that have greatly improved the efficiency of the plant.

The first two changes made concerned the primary clarifiers. In the original design all wastes were combined ahead of the clarifiers and all wastes settled together.

After several months of operation it was evident that the caustic was effecting the settling of the combined wastes to a greater degree than anticipated.

Suspended solids that should have been removed in the primary clarifiers were being dissolved by the caustic and were passing on to the first-stage filter. This increased the biological loading to the filter and the remaining units in the plant.

The inlet arrangement to the primary clarifiers was redesigned, and separation of the wastes was carried through the primary clarifiers. Also, it was found that more effective settling could be obtained if the starch waste were coagulated with lime. These two changes in the primary clarifier operation reduced the biological loading to the filters and resulted in a more efficient operation of the plant.

The third major change was in the ventilating system for the first-stage filter. During the summer of 1957 an odor problem developed in this filter, and for several months we were unable to determine the cause. Inadequate ventilation was finally suspected and recording thermometers were installed to determine the temperature of the filter effluent and the atmosphere.

We found that the temperature of the waste and the atmosphere were relatively the same for about 60 per cent of the average summer day. This retarded natural ventilation during the daylight hours and caused a depletion of dissolved oxygen in the waste as it passed through the first-stage filter.

Anerobic conditions in the bottom of the filter had resulted in a biological growth that produced very foul odors. These odors accumulated in the filter throughout the period of poor ventilation and were exhausted in the late afternoon and early night hours.

When adequate natural ventilation was re-established in the early morning hours and on the week ends, no odor was evident. This condition was corrected by installing four ventilating fans to provide forced ventilation.

The best operation has been obtained with the fans blowing into the under-drain system of the filter. The efficiency of the filter in reference to BOD removal was also improved by this installation.

Ventilating fans were installed on the secondary filters at a later date and have also improved their operation.

Odor problems have developed in the filters at times from various causes. Several odor-masking chemicals and sprays have been used in an endeavor to control this problem. Some of them have been helpful from the odor viewpoint. However, several of them have

*Pounds of oxygen the waste consumes daily

TABLE 1

Average Results

	January	August
Average pH to plant	11.5	11.4
Average BOD to plant, ppm	1600	1390
Per cent removal of BOD	81.2	95.3
Per cent removal of settleable solids	96.0	98.3

actually been harmful to the biological life in the filters.

We are considering a dome-type structure to enclose the filters completely. The exhaust air and gases from the filter would then be burned with the waste gas from the digesters and put through a stack. There is a filter in Sarasota, Fla., with such an arrangement and it apparently has corrected the problem.

The advantages of an arrangement such as this would be threefold. It would control all odors, confine all psychoda flies, and maintain higher winter time temperatures.

Operating Results. The operating results of the plant are very satisfactory. Averages for a winter and a summer month are shown in *Table 1.*

On the normal operating week day the average flow to the plant is about 2.5 MGD. Of this flow about 60 per cent is textile waste and about 40 per cent is domestic sewage.

There are three modifications in the design of the plant which will be emphasized. The first of these is that we do not neutralize the very highly alkaline waste. The average pH of 11.5 entering the plant is much higher than that of a normal sewage plant. We maintain this high pH by feeding caustic waste from the storage lagoon on a 7-day basis rather than directly from the bleachery as it is discharged.

The second modification is in the BOD loading applied to the filters. The average BOD entering the plant, when the bleachery is in operation, is usually between 1800 and 2000 ppm. The normal BOD loading for the design of a filter is 2 lb of BOD per cu yd of stone. We designed our filter for 4 lb of BOD per cu yd of stone. In the regular summertime operation of the filter, the BOD loading is in the range of 7 to 10 lb of BOD applied per cu yd of stone. Actual removal of 4 to 5 lb of BOD per cu yd of stone has been obtained.

The third modification is in digester capacity. The sludge from the starch waste decomposes very rapidly and produces large quantities of methane gas. Digestion is accomplished in about 10 days rather than the normal 30-day period. This rapid digestion and scum control is aided by recirculation of supernatant through inlet pipes in the floating cover. The temperature of the digesters is maintained between 95 and 100 F.

Approach to Treatment Varies Widely. The textile waste-treatment method employed at Kannapolis is not a new process. It is an established treatment method that has been modified to fit the needs of this particular problem. These modifications were indicated in our laboratory studies, and actual plant-scale experiments showed them to be practical.

There are many cases where industries and municipalities would both benefit if cooperative studies of their waste problems were undertaken. The solution would often reduce the cost to both.

Research by the textile industry has provided methods of treatment for almost all of the textile waste being discharged. This information is available in the literature, and I will not attempt to go into detailed treatment methods. The problem is very complex, and each individual case should be studied on its own merit.

The smaller mills can often have their wastes treated by a municipality. In many cases no pretreatment is necessary.

However, there are cases where regulation of flow, reduction of temperature, or chemical pretreatment would be necessary. These limitations are often necessary for the successful operation of a biological treatment plant.

However, they should not be imposed on the mill unless they are necessary. The problem is one of cooperation between the industry and municipality if the best solution is to be found.

The small mills that are not located in or near municipalities should employ qualified consultants to study their waste problems and to design their waste-treatment facilities.

The very large textile industries usually have the experienced personnel to solve their own waste-treatment problems. Treatment of their own wastes are very often more economical, especially if the municipalities involved have a surcharge for excessive BOD content.

This excessive BOD, in textile waste, is usually in the sizing and is readily treated with biological processes. The chief problem for an industry is to provide 7-day operation in biological treatment. Some waste must be found that can be stored and used to maintain the process during the time the mill is not in operation. In several cases, industry has contracted to treat domestic sewage for municipalities in order to provide a more economical solution for both.

Conclusion. In conclusion, I would like to offer these four points that I think are necessary for the successful solution to a textile waste problem:

1. A genuine desire by the management to solve the problem
2. A thorough study of the problem by competent personnel
3. Good design based on the results of the study
4. Efficient operation of the treatment plant

The problem of stream pollution is increasing every day. New and more economical methods of textile waste treatment are needed to combat this ever-increasing problem. The textile industry should continue to strive for better methods of textile waste treatment.

Ingenuity a key to profitable braiding

Just name it and this firm probably will braid it—and ship it in four-ounce to 20-pound packages

This Model 45 winder produces endless packages of heavy braid at speeds up to 150 rpm.

Staff prepared Exclusive

FRANKLIN Braid Division of Wick Narrow Fabrics Co., Emporia, Va., relies on ingenuity to meet current production problems adequately. Harry Evans, manager, devised many of the devices used to implement production.

Production is largely soft braided tape and tubular braid. Package sizes range from 3″ traverse 2″ diameter to 10″ x 10″ and from 4 ounces to 20 pounds on tubes.

Slotted angle iron is used effectively to mount additional machinery. One man can put up a 50′ table of this iron in one day, ready for machines, except for the shafting. The mill now operates 325 braiders. Plans call for 200 additional machines in the next six months to make a more diversified line of braided products.

A winder was adapted with stop motion, pulleys, and knot detectors for endless packages and operates at 100-150 rpm on heavy tubular braid.

A special winder puts up as many as three packages per spindle.

Roving cans are used to receive braided products from the machines. These are used in the winding department by running the braid over improvised "pot-eyes" or hooks attached to the ceiling. Tape has a tendency to curl in cans, and running it over long distances straightens it out better for packaging under tension.

Oil cans attached to the roving cans hold extra yarn to replace the empty supply package in the braider. Small, metal "downspouts" on the braiders feed the braided product into the roving cans.

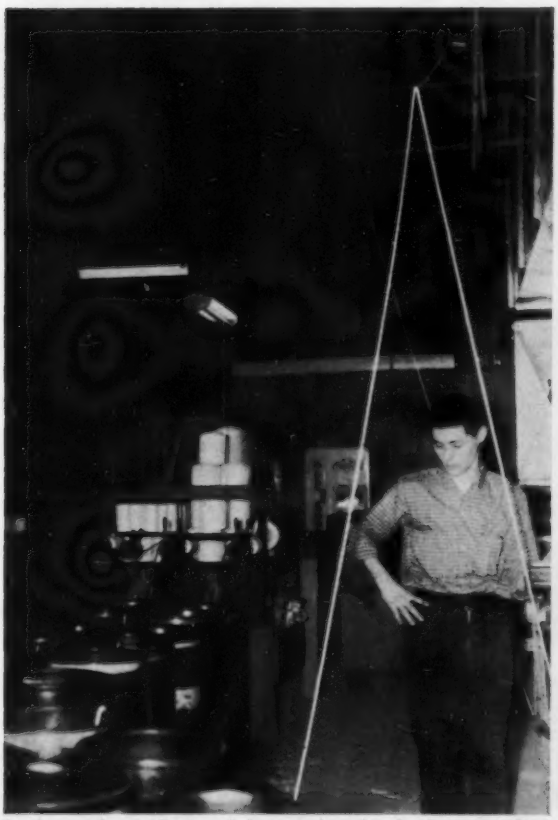
Oil cans for extra yarn are placed on machines where knots can be tolerated in the braid, not on braid machines where knots cannot be tolerated. Yarns used range from 6s/2 cotton to 40s/2 cotton and from 8s to 16s, cotton.

Color coding on tubes is used extensively to distinguished S and Z twist and different counts of yarn, and 50 different counts and qualities of yarn are used here. The mill has been operating five days, three shifts a day, for the last seven years (since the operation was first started). Some filament nylon, Dacron, and glass yarns are used.

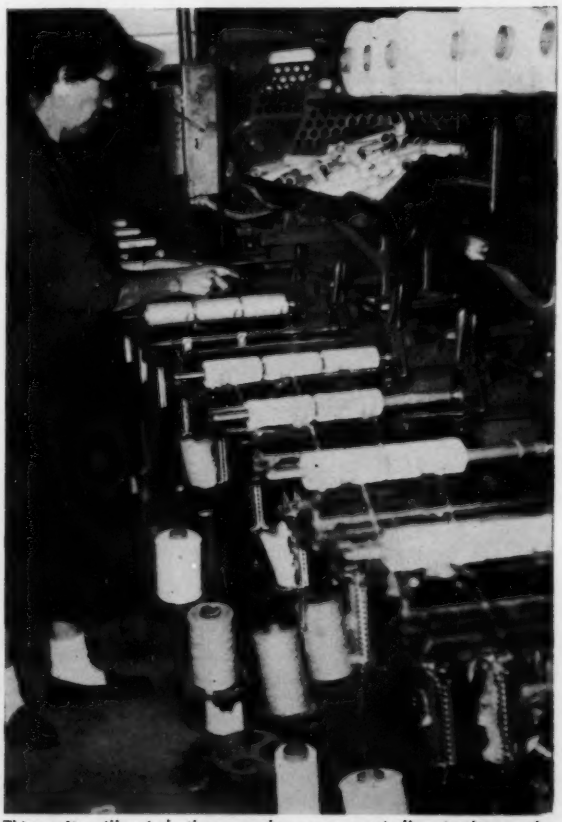
Electrical lacing tape is one of the unique products made.

Slotted angle iron forms tables for mounting additional machines.

Braiders discharge product into roving cans. Oil cans hold yarn.



Braid passed over "poteyes" loses curl, makes for better winding.



This unit will wind three packages per spindle simultaneously.

Shuttleless weaving experience shared

S. C. mill men report on shuttless looms, loom-mounted filling winders

Staff report

SEVERAL HUNDRED members of the South Carolina Division of the Southern Textile Association met at Easley, S. C., recently and discussed mill operating practices and problems. *Dave Roberts,* Clinton-Lydia Cotton Mills, Clinton, S. C., chairman, presided at the meeting. Alice Manufacturing Co., Glenwood Mills, and Woodside Mills were hosts for the meeting.

Louie Burkes, Calhoun Mills, Calhoun Falls, S. C., led the lively discussion on weaving in which attention focused primarily on DSL shuttleless looms now in operation in several mills.

One mill man said that honeydew affects filling and the center fork operation on shuttleless looms. Another man said honeydew had no effect on operation of the looms in his plant.

Some mills had trouble with tight or slack selvages; others reported no trouble with the selvages. In one instance a mill man explained that his experience was confined to sheeting, and no trouble was evident with one pick being longer than another. This was in answer to a question from the floor.

Another man said some oil got onto the cloth but not as much as on conventional looms. A change in the kind of oil being used was suggested as a possible remedy.

Filling counts being run on the shuttleless looms ranged from 24s to 40s cotton counts, and no special or unusual trouble was reported in controlling filling in weaving. No change was reported in size formula in view of the small shed opening required.

Although the small shed should give less shedding of size, more shedding was experienced due to the increase in speed. One man said overhead cleaners are a "must," and hand cleaning is necessary. Speeds ranged from 236 to 285 ppm in production. No one reported running the looms on 80 square goods.

Troubles in finishing included break outs on tenter frame and singer. The maximum installation was said to be 150 looms with one fixer handling the set; therefore the maximum number of looms per fixer had not been explored.

The biggest trouble on 150 looms was in controlling filling; the same trouble experienced on conventional looms, it was explained.

Someone asked how many degrees of tolerance are permissible on the dial indicator before trouble occurs. Filling control is critical at 180 degrees with both clamping and releasing the pick being critical, one man indicated. Other settings are less critical.

No one had enough wear on the new looms to determine if lost motion would give trouble. In discussing fancy patterns, several mills reported weaving with single filling on up to six harnesses.

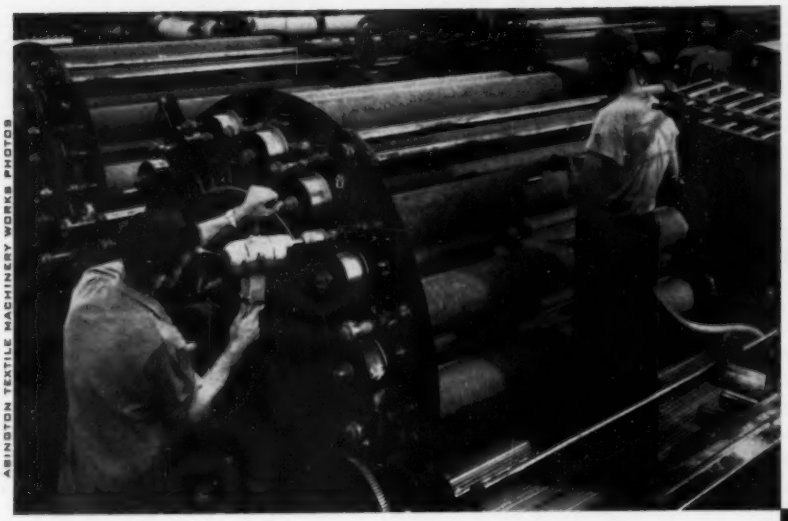
In discussing Unifil, someone asked how long does it take to pay for itself on counts in the range from 8s to 40s. It was explained that coarse yarns ranging from 4s to 25s showed the best return, and on rewound filling on coarse counts, the units should be amortized in 2-3 years.

A mill man asked that if only four inches of clearance existed between looms in place would this clearance be sufficient to receive the winders without moving the looms. Such small clearance was considered too critical to allow installation of them without moving the looms.

The range of yarns run on this type of winder included: 3s to 35s carded; 30s to 80s combed cotton; 3s to 60s spun rayon; 30 denier to 1800 denier filament yarns.

Chairman Dave Roberts presided.

Louie Burkes lead weaving forum.



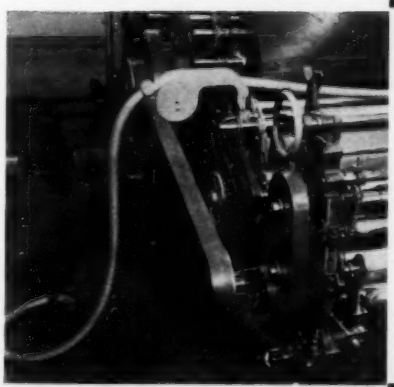
ABINGTON TEXTILE MACHINERY WORKS PHOTOS

Determine stripping intervals by condition and amount of stock processed, this veteran boss carder advises

Vacuum stripping removes the dust along with the fiber. Here one man turns a worker with a power tool while a second man applies the stripper nozzle.

DON'T STRIP BY THE CLOCK!

by C. Jay Williams
Exclusive



With the traversing stripper, the card tender may look after details elsewhere on his job while card is being stripped.

Card strips may even be carried from the room through system of pipe trenches.

Traversing strippers clean cylinder wire with workers and stripper rolls still in place.

STRIPPING is not a simple matter of cleaning the wire, bringing the web through the empty wire, getting up the roving ends, and then putting the card in production. Certain precautions must be taken since a complete stripping of the wire makes a profound though temporary change in carding conditions.

What happens when and immediately after the card wire is stripped?

Production stops, roving weights are temporarily altered, the very nature of the web is changed, and with some blends there is a radical change in the roving shade.

After stripping, the empty wire absorbs a great measure of the fibers, and this "loading" of the wire reduces the web thickness, making the roving much lighter than the required weight. Hence, at stripping time the scale pan on the automatic feeder must be adjusted to feed more stock—usually 10 or 15 per cent more to offset this condition.

One way to overcome this condition is to hang a few metal washers on the scale pan arm, and remove them one at a time, or a few at a time, as the card wire fills up and the roving weight gradually increases. In this way the card fixer knows exactly

how much weight was added to allow for weight loss at stripping time, and when all washers are removed he will know the card is back to its normal running condition. Some mill men prefer to stack the washers from No. 8 copper rivets and burrs to get the needed effect.

After stripping, the ends from No. 3 deck are run down onto the No. 2 spool so that frequent weighings can be easily taken until the weights are up to standard and are holding steady. Then the card is put back into production.

Frequent readings of the roving weights and adjustments of the scale pan are necessary until the card gradually settles to normal, which usually takes from 1½ to 2 hours time.

Rather than let all the spools of the first set fill up to capacity, and to guard against making a lot of waste in case the roving weight has increased too much over the tolerance allowed, it is a good precautionary measure to take off one spool when ⅓ or ½ full and check the roving weights; then take another reading when the spools are full.

Expect Some Roving Changes. Fine fibered stock for fine yarns, whether natural or synthetic, cling more tenaciously to the empty wire right after stripping, making a rough web at the tape doffer and sometimes giving trouble when getting the roving ends onto the spools. Piling more web on the broad band feed table or hand throwing more stock on the first breaker feed table will make the web thicker and stronger, and less trouble will be experienced in getting the ends onto the spools.

When a teenage boy, I worked for a carder who, upon receiving a complaint from the spinning room, would give an order to strip the card completely. This seemed to be his cure-all for all roving troubles. And it worked, since the stripping effected a temporary improvement.

The blends were a combination of good virgin wool and reworked wool stock, and more of the short fibered reworked stock remained in the empty wire. Consequently, for a few hours after stripping, with a larger percentage of good wool going into the web, the spinning quality of the roving improved.

A typical shade-sensitive blend is one composed of a given percentage of white, or some light-colored carrying stock such as good new wool or a clean synthetic, and the remainder of the blend a dark colored short reworked stock. A complete stripping of the card will make a radical change in the shade of the roving, as more of the darker reworked stock is held by the empty wire after stripping. This leaves a larger percentage of the lighter colored carrying stock in the roving.

By saving a hank of roving just before stripping and comparing this with the roving produced right after the stripping operation, the difference in the shades of the two rovings can be seen. Gradually the true shade returns as the card wire fills up, but some of this off-shade roving may get into the yarns.

If the yarn goes into a fabric in combination with other yarns of other colors, the off-shade may not be noticeable. But if the fabric is composed of yarns all of one shade, or if either the warp or filling is all of one color, any off-shade yarn will show streaks that can be seen ten feet away.

Minimize Stripping Effects. I have seen 100 per cent virgin wool blends produce off-shade yarn caused from stripping the entire card at one time. These were blends of medium staple wool mixed with very fine short staple wool.

Yarn from a few off-shade spools, if spread around, can damage several pieces of cloth; and, of course, the best preventive measure is to strip only one section of the card set at each stripping.

I have known carders who would not think of stripping the entire card, but who played it safe by stripping the first breakers one day and the finisher section the next day. All-wool blends, if all the stock is of uniform quality and staple, seldom give off-shade trouble from stripping.

Fine pin-point wool specks are an annoyance to any mill; and where this trouble is present, stripping makes it worse. Some of the fine wools give the most trouble in this respect.

If present in the wool, these fine specks are far more numerous in the roving when the card wire is empty as it is right after stripping, since at this time the web lies deeper in the wire and card wire does its best work when partially filled with a blanket of stripping fiber—since the web is then carried on the points of the wire where the real work of carding is accomplished.

Set Cycles with Care. Stripping is a necessary operation, but stripping schedules should be adjusted or adapted to the different type blends and be gauged by condition of the stock and by the pounds of roving produced and *not by the clock.*

A greasy blend making 1-run yarn may require a stripping of the card after 1500 to 2000 pounds of production, while a card running on a clean blend of fine virgin wools might handle seven or eight thousand pounds between strippings.

I have run such blends, for several years, on a schedule of 10 thousand pounds production between stripping operations. Some card rooms have no carefully studied stripping plan.

I have observed card rooms on low grade blends making heavy yarns, changed to much finer yarns from clean blends without changing the stripping schedule. In short, stripping by the clock became a habit.

I was once called to a 12-set mill where the management figured that card room costs were too high and asked me to make improvements if possible. The cards had been making heavy yarns from low-cost blends, and had changed over to 3-run yarns from clean, all wool blends. Two stripper men on each shift stripped all 12 cards every 8 hours, which meant at least 3 hours lost production time for each card out of every 24 hours.

At my suggestion, the overseer gave orders to allow one card to run 24 hours without stripping. As there was no drop in yarn tests or loss in spinning quality of the roving, the stripping schedule was changed from once every 8-hour shift to one stripping every 24

hours. This eliminated a labor cost of $200 per week and—far more important—a reduction of at least 66 per cent in lost production time.

After one week at that mill I took the overseer job in another mill with 12 three-cylinder cards and found much the same condition existed. A large percentage of the blends were 100 per cent clean white wool and some were 100 per cent fine worsted tops. Yet there were 3 stripper men on each shift stripping an average of 5 sets per shift.

After improving the general condition of the card wire, I was able to let the roving production go to seven or eight thousand pounds per card between stripping operations. On some blends the limit was extended to 10 thousand pounds.

Card Waste and Stripping Frequencies. There are some who will say that making so much production without stripping will cause a drastic increase in card waste, but there is no reliable data to substantiate this claim. In fact, there is very little practical research work ever done in woolen manufacturing, that I know of.

If the stock is greasy and cards allowed to run until points of the wire coat over with grease, naturally there will be a heavy increase in fibers dropping under the cards.

I once made a test by dividing a 4000-pound lot into two equal parts. The blend was 40 per cent new wool and 60 per cent reworked wool stock. One 2000-pound test lot was run through the card with only one stripping, which was done at the time the lot ran off the card. On the second test lot the card was stripped twice—once when one half of the 2000 pounds was run and again when the lot was finished. Both lots started with card wire empty.

Card waste and strippings from the two lots were kept separated and weighed before dusting. The totals from the two lots were practically the same, except the second lot with the card stripped twice showed more stripping waste. Card waste has some market value, whereas stripping waste is practically worthless. Unfortunately, we kept no record of the yarn yields from the two lots.

Card clothing plays an important part in this matter of stripping, as it does in all angles of woolen carding. If the clothing is right, a card will run longer without stripping and at the same time maintain the quality of the roving.

Wool oil is another factor, since a heavy gummy oil will coat the card wire much sooner than a lighter oil especially prepared for woolen blends.

Vacuum Stripping Great Step Forward. Before vacuum stripping was introduced, stripping cards by hand was a sweaty, disagreeable job requiring the labor of strong men. The modern method is a wonderful improvement that has reduced the labor cost for this operation and more important has shortended the downtime somewhat.

It is no longer necessary to dismantle the card partially to get at the cylinder, a practice which in the days of hand stripping so often disturbed the settings of the rolls removed.

Also, if the worker and stripper rolls were put back in the wrong positions, one of the rolls would contact the cylinder wire too closely. If not detected and checked at once, this would mean the points of cylinder wire would be dulled and faced, requiring a grinding operation and many hours of lost time.

Vacuum stripping is a very convenient method, too, since in an emergency one man can strip a cylinder or doffer (as when a fancy setting becomes changed and the cylinder packs with fiber). This can be done by a card fixer in case the regular stripper men are busy.

I have often vacuum-stripped the doffer next to the burr crusher without interrupting production, and the tape doffer without running stock out of the card. Naturally, when doing this job, waste spools must be made while tape doffer is being stripped, but the work of getting up all the roving ends is eliminated.

Vacuum stripping permits a much cleaner stripping job to be done than does hand stripping, because it removes dust along with fiber. In case of stripping a card on which wool colors are being changed, this is particularly valuable. So, to effect the necessary cleanliness when hand stripping must be employed, it is desirable to follow hand stripping with a thorough blowing-off with compressed air. Otherwise, hand stripping leaves dust packed up on the foundation of the clothing.

Something should be said about vacuum stripping nozzle settings; for, if they are set too close to the wire, stock will roll up into pills between nozzle and wire and often damage the clothing. Furthermore, nozzles set too close do not clean well. The correct distance should be determined locally and gauges prepared to enable fixers to set all alike. The clearance—nozzle to wire points—is in the neighborhood of ⅛" to ¼".

Wood floors taboo under high-temperature dryers

■ HEAT from a tenter dryer operating at 400 F was transmitted through a 3" thickness of magnesia insulation to wood flooring beneath. Eventually the floor ignited, and when the fire was discovered by a guard it was spreading under other dryers.

Before much damage was done, the fire was extinguished; but three tenters were idled long enough to lose production of about 270,000 yards of cloth.

Concrete floors are advisable under high-temperature dryers; otherwise a ventilating air space should be provided between the insulation and the flooring.

———

Reprinted by special permission from the January, 1960, issue of *Factory Mutual Record*.

Caustic storage problem solved

Storage tank fabricated in halves, welded together in place

Staff prepared
Exclusive

A SOUTHERN finishing plant discovered an expensive leak in a 16,000-gallon tank for storage of caustic soda. An investigation revealed that the 36′ x 9′ tank had been installed in 1932 and after many years of service had deteriorated to the point where repair would be uneconomical.

Structural changes in the building and installation of other equipment since the tank had been installed eliminated the possibility of substituting an identical tank, because of space limitation and access to the area (both headroom and lateral space). Many pipes had been installed, and other equipment and structural members of the building interfered. It was found that the tank had been lowered into place originally, and later a concrete floor had been poured over the area as additional floors were added to the building.

In attempting to solve the problem of replacement, a number of smaller tanks were considered but were found much more expensive. The most satisfactory solution to the problem was found to be two cylindrical tanks arranged to stand on end, each measuring 14½′ x 7½′, and made in halves to be put into place before welding the halves together. This arrangement permitted using maximum clearances in both directions as well as getting the parts through the access area to the tank location.

No problem existed in pouring concrete footings to support the new tanks because the two tanks rest on flat concrete slabs and require no contoured cradle, as did the tank being replaced.

The replacement tanks also permitted a 10% increase in storage capacity. Actually, a 20% increase in capacity was possible but purchase quantities and local conditions made the 10% increase in capacity an optimum figure.

An additional advantage of two tanks in place of the single tank previously used is more flexibility —the caustic is an 80% concentrate as received and is sometimes diluted as it is brought in. Separate tanks allow varying the concentration in one or the other of the tanks to bring the liquid to desired specifications.

Also, a tank failure no longer endangers the entire supply of caustic.

The two new tanks were made of mild steel to plant specifications by a tank manufacturer, and were delivered in halves to be welded together after being put into position.

Fig. 1. Details of caustic storage tank. Each tank has a capacity of 8,650 gallons, and is made of 3/8" mild steel. Tanks were fabricated in halves, welded together in place.

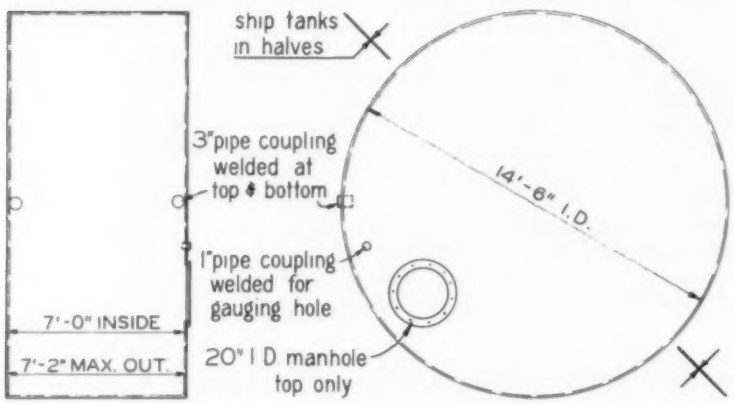
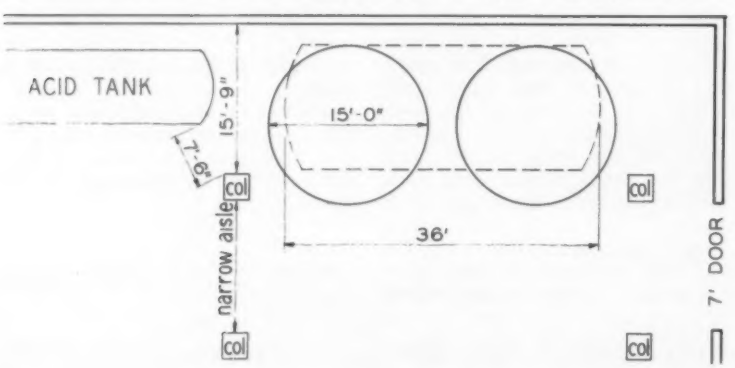
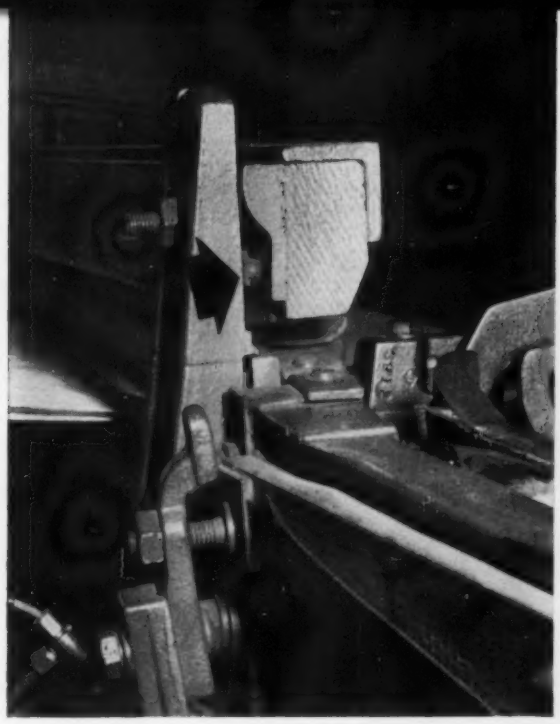

ship tanks in halves
3"pipe coupling welded at top & bottom
1"pipe coupling welded for gauging hole
7'-0" INSIDE
7'-2" MAX. OUT.
20" I D manhole top only
14'-6" I.D.

Fig. 2. Area where tanks were installed (not to scale). Dotted lines represent old tank.





The adjustable hand rail speeds reed squaring by eliminating filing and shimming. A metal block inserted between the rail and the sword enables the fixer to drift the bottom of the rail by loosening hand rail bolt and turning adjusting screws (arrows).

GAUGES in Draper loom maintenance

Aluminum lay, terry reed, and adjustable hand rail conclude lay alignment discussion

Staff prepared
Exclusive

Article 5

ALUMINUM lays are extruded members to which are fitted the race plates and lay ends. Being metal, they are dimensionally stable under the weave room's changing humidity and present "machined" surfaces to which mating parts are easily attached.

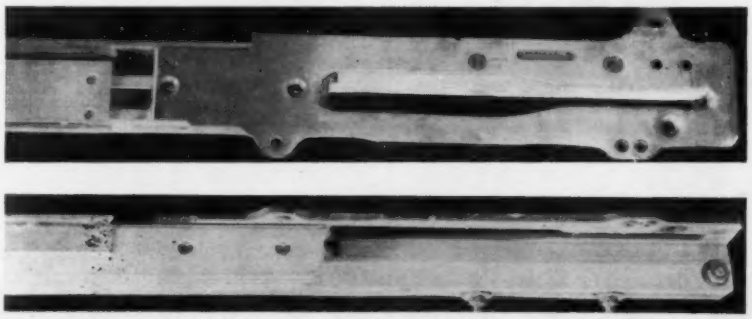
Race plates are secured to them by screws threaded into the aluminum. Since these threaded holes are not to be moved about with the same ease one runs a screw into a wooden lay, the replacement race plates are factory drilled and countersunk, saving much of the labor associated with conventional race plate replacement.

Lay ends are machined where they contact the lays, so the entire assembly—lay, lay ends, and race plates—fits together speedily and accurately. It also bolts to the swords with the same facility.

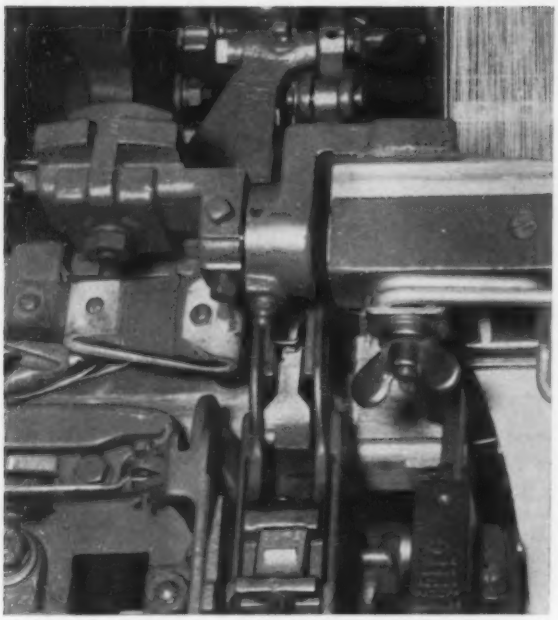
The reed seats in an interchangeable wooden reed groove. When the groove becomes worn, it is simply knocked out of its aluminum bed and replaced with a new one. No more scraping in!

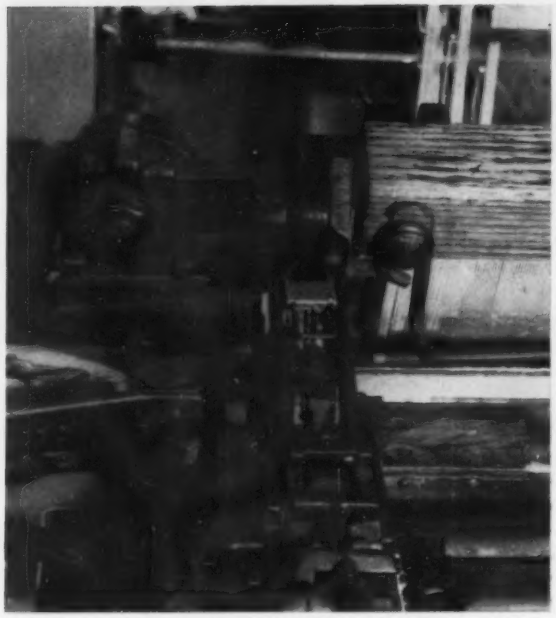
Realignment is almost as simple as replacing the offending part or parts. But the very nature of the materials limits the fitting to shimming operations, making it almost necessary to shim all members to the height of the highest instead of working the high places down as is often the custom with wooden lays.

There is a new hand rail available that is adjusted to the swords without filing away wood or inserting shims to square the reed. This, combined with the aluminum lay's replaceable reed groove, makes reed squaring a speedy and



Top and bottom views of battery end of aluminum lay. Alignment is principally a matter of bolting the various parts in position, as precise machining eliminates most "fitting."





The terry reed mounting is a pivoted extension of the sword, and the hand rail is fitted to it just as is done in squaring fixed reeds. To the left is a late-model terry motion; to the right is a much older, though almost identical, design of the same motion.

accurate operation. The hand rail is adjusted with a wrench and screwdriver.

Yielding Reeds. Yielding reeds are aligned to the back box plates, rather than aligning the back box plates to the reed. Otherwise, the procedure already given for lay alignment is applicable. Usually, the back box plates accompanying yielding reeds are of the nonadjustable type.

The terry motion, at least that part associated with lay alignment, is easy to set, since the reed mounting is the only departure from the lay alignment already discussed. The hand rail is adjustable to swing the reed in or out at the top, and the bottom is aligned against adjustable stops. This is not the time for discussing the motion that swings the reed.

In effect, the yielding reed and the terry reed are positioned in reference to the lay ends (squareness) and the back box plates the same as fixed reeds are.

(To be continued)

How to dye blend yarns and fabrics containing Du Pont fibers

■ SUMMARIZED in the table below is helpful information presented in a recently published bulletin* on dyeing blend yarns and fabrics containing Du Pont fibers.

Prepared both for dyers and for persons not directly associated with dyeing, such as fabric designers, who need a ready reference as to the ease with which a particular combination or blend of fibers can be dyed, the four-page publication provides information on the range of shades, dyeing methods, dyes to use, fastness properties, and possible difficulties.

*"Practicality of Dyeing Blends," Bulletin X-116, Technical Service Section, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

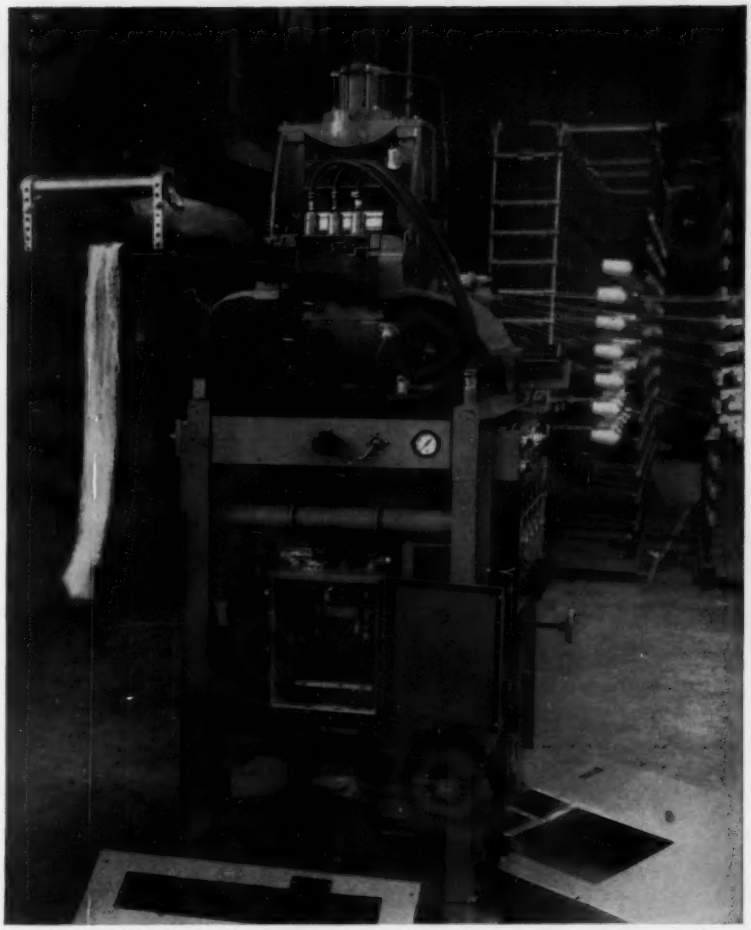
Types of Dyeing Possible For Selected Blends

Blend Components	"DACRON" TYPES 54, 55, 56, 57				"DACRON" TYPE 64				MYLON				"ORLON"			
	Union Dyed	"Dacron" Dyed Component White	"Dacron" White Component Dyed	Cross-Dyed	Union Dyed	"Dacron" Dyed Component White	"Dacron" White Component Dyed	Cross-Dyed	Union Dyed	Nylon Dyed Component White	Nylon White Component Dyed	Cross-Dyed	Union Dyed	"Orlon" Dyed Component White	"Orlon" White Component Dyed	Cross-Dyed
Acetate	Difficult	No	No	No	Some	No	No	Some	Yes	Yes	No	Some	Yes	Yes*	No	Yes
Cotton	Yes	Yes	Yes	Yes	Not Recommended as Yet				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
"Dacron" Types 54, 55, 56, 57					No	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes
"Dacron" Type 64	No	No	Yes	No					Yes	Yes	Yes	Yes	Not Recommended as Yet			
Flax or Linen	Yes	Yes	Yes	Yes	Not Recommended as Yet				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nylon	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes					Yes	Yes	Yes	Yes
"Orlon"	Yes	No	Yes	Yes	Not Recommended as Yet				Yes	Yes	Yes	Yes				
Silk	Yes	No	Yes	Some	Yes	No	Yes	Some	Yes	No	No	No	Yes	Yes*	Yes	Yes
Rayon	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wool	Yes	No	Yes	Some	Yes	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes

*Difficult in some shades

SPUNIZE TEXTURED YARN

Prepared by the stuffer box principle, these bulked yarns offer diameters three times those of spun yarns of the equivalent sizes



Machine used for crimping Spunize yarns (side panels removed). Note crimped yarn being delivered at left and yarn supply in warper creel behind crimper at right.

by Eldon Stowell
Stowell and Company

Exclusive

IN 1949 Nathan and A. J. Rosenstein began working with nylon polyamide fibers in staple and waste form. And as far back as that date they realized that tremendous advantages would be available to the textile industry if only some way of texturizing or distorting filament yarns, as we know such textured yarns today, could be developed. They argued with many associates about the wastefulness of extruding a filament in tow form and then chopping it up for the sole purpose of reconstructing the filament again into a spun yarn, whether it be on the cotton, woolen, worsted, or other modified systems.

Some agreed, but no one, including the Rosensteins, could suggest a process or approach for doing this job. It was not until sometime in 1949—followed by patent applications in 1950—that the first crimped continuous filament yarn was developed by the Rosensteins. Today such thinking is, of course, being rapidly accepted as textured yarns grow into an estimated one hundred million pounds of annual production.

While there are many ideas about texturizing filament polymer yarns, only four basic ideas remain commercial from a post extrusion standpoint. One producer, E. I. du Pont de Nemours & Co., Inc., is making "501" nylon; and Chemstrand is reported also to be making a textured yarn that might be considered as one of the interim production types.

However, to date, the four post extrusion bulking methods are:

1. *False or Conventional Twist Method*: Helanca, Superloft, Fluflon—stretch yarns.
2. *Airjet Method:* Taslan—lower-bulk-type air distortion yarns.
3. *Knife Edge Method:* Agilon—hosiery-type stretch yarns.
4. *Stuffer-box Method*: Spunize and Textralized — two high-bulk yarns.

Great Bulking Property. Typical of comments concerning the bulk-

This is the fourth in a series of articles covering the various types of textured yarns. The first, "Stretch Yarn," appeared in the August, 1959, issue of TEXTILE INDUSTRIES, pages 102-105. The second, "Taslan Textured Yarns," appeared in the March, 1960, issue, pages 84-89, 107. "Saaba Textured Yarn," the third article, was published in the May, 1960, issue, pages 192-193, 298, 300. The next will be included in the August issue.—The Editors.

ing properties of these various methods was a paper delivered to the American Association for Textile Technology, Inc., by Fred W. Noechel of the Allied Chemical & Dye Corporation. In this talk, in comparing bulking properties of the various textured yarns in commercial use with an equivalent size in spun yarn, his company showed that the yarn bulked by means of the Spunize process resulted in a bulking diameter of approximately three times that of a conventional spun yarn of equivalent size.

This bulking diameter was fifty per cent greater than the next closest textured yarn. This is most significant in that a fifty-per cent increase in volume will not only give a lighter fabric but present a raw material saving as well.

While this process was quietly getting around to the trade since 1950, it was this initial publicity that brought the Spunize process to the attention of most of the textile leaders. It revealed a high speed, low cost process with outstanding and superior results.

The Bulking Technique. While in general the same principle of stuffer box crimping is employed in the manufacture of Textralized and Spunize yarns, the Spunize method utilizes the stuffer-box technique in s i m u l t a n e o u s l y crimping a large number of ends in warp form. This is followed by heat setting in an autoclave. And through using special attachments, the Spunize process is able to provide maximum bulk or, where needed, to control to an exact degree bulk for a particular end use application.

More specifically the Spunize process involves the following steps:

1. Creeling up to 400 ends of yarn, which are fed to a high speed crimper. (The photo on page 91 shows the stuffer crimper with yarn creel.) Yarn sizes from 15 to 5000 denier can be handled. Changeovers from one size to another can be accommodated in a matter of minutes.

2. Crimping the warp, collecting the crimped yarn in relaxed form ready for heat setting or ball warp and package dyeing. An automatic laying-in mechanism insures a uniform packing of the crimped yarn.

3. Heat setting, accomplished by the use of wet heat over a period of about thirty minutes. This insures maximum bulking, relaxation, and penetration. It also provides mass lot uniformity and eliminates end-to-end variation. Simultaneous heat setting and dyeing under pressure are also employed with excellent results.

4. End separation, preparing ends for winding onto suitable large size packages. By a unique method a large four-pound textured yarn package can be directly made (by separating the ends) and then twisted in one operation onto a large package machine having individually controlled single stop motion and other features which have been developed for the process.

Spunize Company has made it known that additional patent applications are now on file, covering the by-passing of some of the above steps so as to make it possible for the continuous crimping and wet heat setting and or dyeing of the multiple yarns crimped, in a continuous manner.

To date the Spunize process is employing yarns in the heavier range used primarily in the manufacture of yarns for rugs, upholstery, industrial applications, and heavy knitting yarns. Finer yarn sizes for knitting and weaving are undergoing extensive trials with leading weavers and knitters.

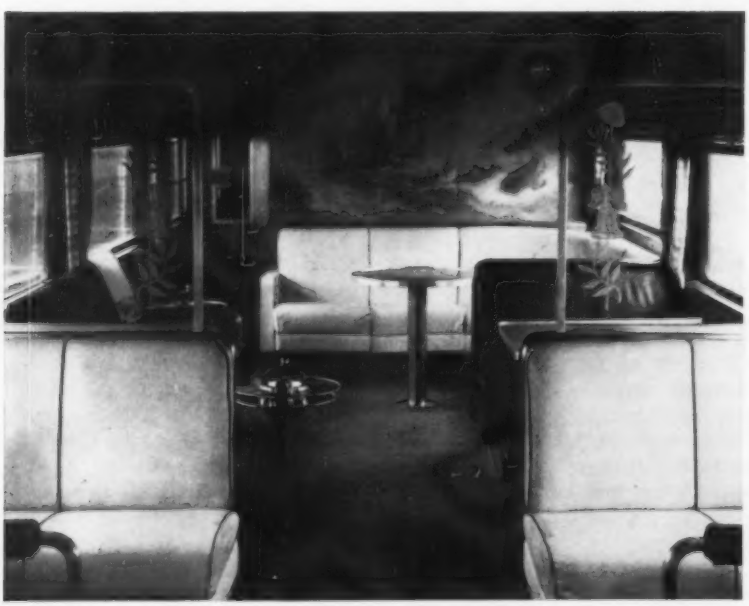
Rather than spread its process into too many hands, where progress control becomes extremely difficult, Spunize, for an indefinite period, intends to work with a limited number of licensees*—believing that in this way they can achieve maximum results in the process that they have pioneered.

*Licensees in the United States are: Ames Textile Corporation, Lowell, Mass.; Bibb Manufacturing Company, Macon, Georgia; E. I. du Pont de Nemours & Co., Wilmington, Delaware; Masurel Mills, Woonsocket, R. I. Licensees abroad: Du-Pont Company of Canada, Montreal, Canada; Mantex Mills, St. Johns, P. Q., Canada; Masurel Freres, Tourcoing, France; Fabelta, Brussels, Belgium; Ditta Raimondo Buratti, Biella, Italy.

Textured nylon carpets on streamliners

■ THE CARPET in this handsomely furnished car was produced by Croft Carpet Mills from textured Caprolan filament nylon.

All of the Pennsylvania Railroad's crack "Congressional" trains have been carpeted with this fabric, according to Allied Chemical Corp.



How to manage those RUSH jobs

Every plant is likely now and then to get a rush order that can cause no end of confusion. Here are steps the supervisor can take to help him live with those rush jobs.

by Fred H. Drewes—Exclusive

FOR EVERY ACTION there is an equal and opposite reaction. This is one of the basic laws of physics, and it is equally true of textile mill operations. It is seldom that work flows smoothly or "in a straight line." More often the operations tend to work in peaks and valleys.

The effect of supervision is primarily to control the extremes of the "high and low" peaks and valleys and thereby to control the average output. In a production unit that is well supervised, it is possible to get maximum performance in response to an emergency. However, it is not possible to get maximum performance constantly, no matter what the emergency is or how well the group is supervised. It is impossible to eliminate completely the letdown that naturally follows all-out effort. And as this is a normal reaction, the supervisor must learn to live with such letdowns after real peak performance.

Over a period of time, constant emergencies will not only tend to reduce the performance level reached in each case, but will even have a dampening effect. Actually, personnel will become crisis-saturated and nothing will seem to them to be a legitimate emergency.

Do not forget the fable of the shepherd who cried "wolf" too often. The townspeople got tired of running out at his false alarms and did not show up when there was a real emergency. Constant emergencies indicate that the operation is either undermanned or undermanaged.

Controls Supervision Can Exercise. If all this is true, how can the supervisor best manage his emergencies so that he has the best possible average output? After all, there are a great many mills experiencing frequent rush jobs due to the nature of their businesses. Is there anything that these supervisors can do to help?

There are many ways in which a supervisor may take some of the misery out of too many crises, and taking the problem to top management is not the first thing to do. He should do the best possible job of managing before taking the problem higher up.

A control or coordination of work routing, scheduling, and dispatching in production will help to eliminate or control rush jobs. Access to the scheduling department's back order and inventory position report will acquaint one with the open order position. Then, after noting the orders that require specific scheduling, it is in order to check one's schedule board and day-to-day performance on rush orders applying to his department. By so doing, one establishes that his position is such that the order requirements will be met in advance of the date of fulfillment or shipment of customers' orders.

In expediting orders of finished cloth, it must be kept in mind that the inspection of grey goods, the dyeing operations, and final inspection of finished cloth, must be made before the order can be filled or expedited. It may necessitate starting up additional looms or suspending the operation of others.

In the latter case this must be done to avoid excess inventories. The open order position and the failure to stop weaving production when order requirements have been met—considering any previously established or built-up excess inventory—will pin-point to supervisors the necessity of inventory control, realizing that an accumulated inventory results in a tying up of capital investment.

It might be of value, at this point, to stand aside and take a hard and critical look at the jobs one is handling as a supervisor in each of the areas to follow. These are the things that can be done to diminish the effect of emergencies in one's operation.

1. *Avoid Panic.* Manage those emergencies. Don't stampede before rush jobs. Taking time to plan the job will save time in the end and almost always results in a better job—if one wishes to run a four-minute mile, he doesn't start out by sprinting the first quarter-mile.

Frenzied activity is not necessarily an indication of top production. It may look impressive, but it is not likely to yield maximum effectiveness. Shakespeare described such as being "full of sound and fury, signifying nothing."

The supervisor of a mill production unit has a major contribution to make in getting out a rush job. He has certain decisions to make which will

materially affect the time required to do the job.

He must decide how the job should be done. He has to assign the people and the equipment necessary for the best production.

Based on his preliminary planning, he must schedule the job so that he can best overlap operations to reduce the overall time required, decide at what point he can start "operation two"—set up additional looms or curtail the operation of same.

Finally, he has to coordinate the job and keep it on schedule. How well he does these things will determine how quickly the job can be accomplished.

It is important to remember that the way a supervisor's weavers or operators react to emergencies is probably a reflection of the way he reacts. If one remains calm,

"If one remains calm..."

avoids panic, and does the necessary managing, one will find himself, his assistants, and his operators more effective.

2. *Distribute Emergencies.* Do not call on the same operators all the time for rush jobs if it can be avoided. Although one may have a best producer, a second best producer, and so on on each shift, he should not assign the best producer or operator to every rush job. He or she may get crisis-saturated, may not be as productive as the "second best" would be. One has to stimulate people to get them to respond, and it is easier to get three different people on each shift to respond for two or three days than it is to get one person on each shift to respond for an entire week.

3. *Limit Emergencies.* One cannot have constant emergencies, because then they stop being emergencies. It is up to the supervisor to limit requests for extraordinary effort to real emergencies.

I recall visiting a mill that used yellow bale tickets for routing jobs through the mill. Top management came up with the inspiration that they would use a "red tipped" bale ticket for the rush jobs.

Six months later it was hard to find a yellow tag in the mill—everything was "Rush." They, obviously, were not getting maximum effort on every job, but they had succeeded in diminishing the importance of any legitimate rush job they did have.

4. *Maintain Good Customer Relations.* Frequently, the production scheduling manager must serve as the buffer between the people making the demands (customers) and the departments and people who have to respond to them. If one has convinced his customers that he will always give them the best possible service, the customers will be more reasonable in their demands.

However, customers should not get the idea that they must specify a job as "rush" or they just won't get it at all. Sometimes, the reason that people put a "rush" label on a job is because the salesman has told them too frequently in the past that, "It cannot be done."

One has an education job to do in this area, for one's customers may not realize the problems they create. They may be making specifications that make the job unnecessarily difficult or expensive.

It is up to the supervisor to let them know about it through the proper channels. If one has his order or sales or scheduling department explain to customers just how that department can help the supervisor to serve the customer better, the customer usually is willing to cooperate.

As an example of how this can be accomplished, the writer "sat in on a case" recently. It seems that the order was placed with a salesman for delivery of certain finished goods in four weeks. The order was properly routed through the credit, order, and scheduling departments, and the goods were being manufactured.

Under the most ideal conditions the finished goods could not have been produced, dyed, inspected, and shipped in less than from four to five weeks, as more than one style and a variety of colors had been specified. At the start of the fourth week, the customer called long-distance—and as usual, "collect"—and to add to the misery called during lunch hour when all department heads were out to lunch or were not available.

The customer proceeded to request reversal of his shipping schedule, demanding shipment of a style and color which he had previously agreed upon to be included in the final shipment on his order. It appeared that he had taken a few "rush orders" himself from his customers and was unable to fill them from his exhausted inventory.

After locating and reviewing his original order and shipping instructions, some one told him tactfully that everything was proceeding according to schedule and that he could expect item one to be shipped as scheduled. Likewise, all other items on his order in the order as scheduled and that perhaps a small portion of the goods originally scheduled to complete his order could be expected to be included in an earlier shipment.

No definite promise was made, and this advice seemed to satisfy the customer. Revised dyehouse order instructions were promptly issued on a limited yardage of the item now considered "rush" and the finished goods for a portion of same was shipped as intimated in the 'phone conversation.

Experience has taught all of us that an effort to please a customer will create better customer relations. But one thing is quite necessary—make no promises beyond the bounds of good judgment and machine and operating conditions.

5. *Maintain Good Staff Relations.* Everyone is aware of the need for the supervisor to maintain a good relationship with his staff. This is particularly important in an operation where he frequently has to motivate people to respond to emergencies.

In addition to normal require-

ments for good staff relationships, such as equitable wages, fair treatment of employees, pleasant working conditions, and the like, there is one point that is not often mentioned. It is not enough to maintain just a good formal relationship; there is even more potential in maintaining as friendly a relationship as possible. Basically, it can be summed up as follows:

a. People will do a certain amount of work because they have to.

b. People will do a certain amount of work plus additional work requested because they like their job and feel that they are being treated fairly and equitably by management.

c. People will do a certain amount of work, plus additional work, plus emergency demands, because they actually like their supervisor and are willing to help him personally in an emergency.

An interesting case in point happened some time ago in a mill where the usual work schedule called for an 8-hour shift of duties. On the following shift three weavers failed to show up for work. As a result, three operators of the previous shift stayed on for another eight hours to get out the production on a rush job.

Why? Not for the overtime pay alone, but simply because the supervisor who requested their services was extremely well liked, and in a jam, and they wanted to help him out. I know of nothing that would have motivated these people to that kind of performance other than the regard they had for that man.

Five ways are listed through which one can improve his management of rush orders or jobs. Naturally, these are not the only things that one can do—there are a great many mill techniques available which will reduce the number of rush jobs in any operation. Make full use of the help obtained from:

a. Proper personnel testing and selection procedures.

b. Good staff training programs and cooperation among sales, order, and production departments.

c. A continuing methods improvement program.

d. The best possible equipment selection practices for rush jobs.

"... put price tags on the problem."

e. Effective use of production standards to control one's operations.

Suppose one honestly feels that he is doing the best job he can of managing his operation in all the areas mentioned above, but he still has too many rush jobs. What then?

Well, if one has done all he can, now is the time to take his problem to management. However, the way he presents his case will have a material effect on his chances of getting help.

It is not enough to complain to management about the workload or the excessive rush jobs. He will have to state his problem in terms that will motivate management to action.

One of the best ways to do that is to hang a price tag on the problem. Don't just generalize on effects such as damage to morale, high employee turnover, loss of quality, errors, and the like. Instead, show the cost of these effects. Show what a higher employee turnover rate costs the company. Show the cost of overtime labor to handle rush jobs. Show the loss in productivity due to poor morale.

One can't just state the problem, no matter how clearly, and then expect management to come up with a solution. As the person closest to the situation, and the one best informed on the subject, it is up to the supervisor to recommend a solution.

Give what appears to be the best answer. Whether it be people or quality of raw materials or poor scheduling of raw materials or equipment, tell management what is needed.

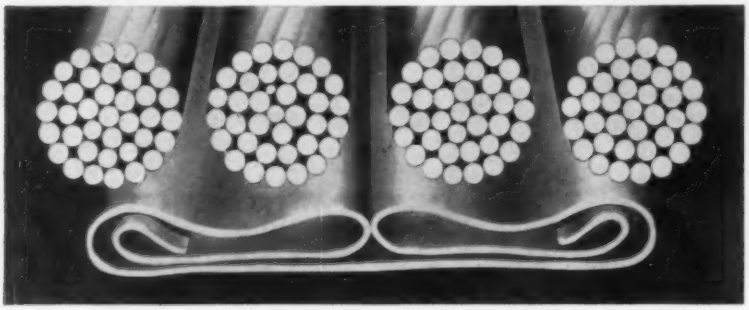
If action is desired, tell management what results to expect if recommendations are followed. Will it mean decreased costs, improved quality, better service, or what? These are the things management must know to evaluate the gravity of a problem. Management wants a good job, and is willing to help. So, if one explains the need for action in concrete and specific terms, complete with a plan for remedying the situation, he can expect some help. Otherwise he may only get sympathy.

In summary, there is much that the supervisor can do about too many rush jobs. It is first necessary that he understand something of the nature of rush jobs and their effect on the performance of his people. He then must make certain

that he is making the best possible use of not only the modern mill tools and equipment available but, even more important, the best mill methods. Then, having done his part, he can ask for help.

If he explains his problem clearly enough and submits a sound plan for solving the problem, he can usually get the assistance he seeks. While this may never eliminate all the rush jobs in his operation, it will certainly help minimize them and allow him to reserve his emergency performance for the real emergencies. If he can accomplish this, he will have gone a long way toward eliminating one of the major and recurring headaches in mill supervisory management.

The difference in the structure of Rovana and conventional yarn is readily apparent in this cross-section sketch. Basically Rovana is a thin slit film which is folded into a continuous ribbon or micro-tape as shown here by the sketch below the conventional yarn cross sections. Thus, it is easy to understand that when the micro-tape is woven into a fabric fewer yarns are required to cover each inch of space than with conventional yarns.



Tips for mill processing of Rovana micro-tape yarn

■ CONVENTIONAL textile mill equipment may be utilized for processing "Rovana" saran micro-tape, according to Nelson W. Abernethy of the Textile Fibers Department of The Dow Chemical Co., manufacturer of the ribbon-like yarn.

Rovana is processed readily as a tape of plied yarn, alone or in combination with other materials, the assistant textile research laboratory director told members of the American Association for Textile Technology at their meeting on March 2, 1960, in New York City.

Differences between Rovana and other textile fiber and filament products were emphasized. Stressing the unique structure of Rovana yarn (see accompanying cross-section sketch), Mr. Abernethy showed how lightweight fabrics made of the yarn have three to four times the tear strength of comparable cotton fabrics. The high coverage provided by Rovana yarns was also described (see accompanying photos which depict two plain weave fabrics).

Among other advantages of the yarn listed by the speaker were its nonflammability and resistance to chemical attack, moisture, rot, and effects of weather.

Twisting and Warping. Since Rovana does not require conversion from staple to yarn, processing may begin at twisting or warping, depending on end-use requirements. Succeeding processes such as winding, quilling, and weaving are performed on the same equipment used for other textile processes.

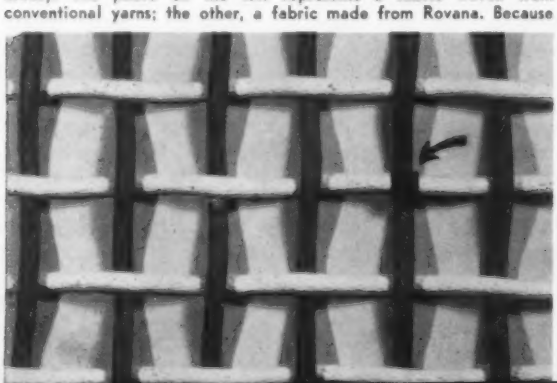
Rovana has been warped primarily on the silk or direct system employing speeds in the range of 80 ypm. A radial withdrawal from the creel package should be used in warping to prevent insertion of twist and to insure satisfactory weaving. An adapter must be employed to permit each package of yarn to turn freely and evenly about the creel pin.

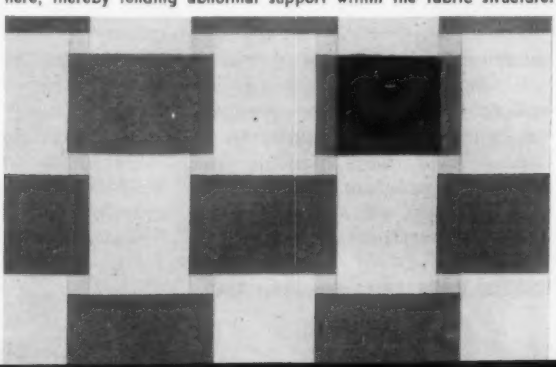
Weaving. Fabrics of Rovana can be woven by employing the basic principles of filament weaving on single- or multi-shuttle looms. Fabrics of 100 per cent Rovana and combination yarns have been satisfactorily woven for a variety of applications. These have included fabrics as light as 1 oz/sq yd and as heavy as 30 oz/sq yd.

Dyeing. Conventional dyeing techniques are not recommended for this yarn which is offered in a wide range of solution-dyed colors. However, dispersed acetate and basic dyes may be used where marginal fastness properties are acceptable. The lack of dyeability of the yarn can be utilized to produce union shades, tone-on-tone, and heather effects. Since many of the dyestuffs neither stain nor dye Rovana, a complete range of shades can be obtained with many combination fabrics, using piece dyeing techniques.

Finishing. An outstanding feature of the new yarn was described by Mr. Abernethy as its susceptibility to "thermo-styling." As the yarn is subjected to heat and pressure, it can be compressed or shaped.

Compare in these photos depicting two plain weave fabrics the coverage and size of the yarn bearing surfaces (black shaded areas). The photo on the left represents a fabric woven from conventional yarns; the other, a fabric made from Rovana. Because Rovana is flat, fabrics that are very resistant to tearing can be produced with it. This ribbon-like yarn permits a broad surface of one yarn to rest against a broad surface of another, as shown here, thereby lending abnormal support within the fabric structure.





Processing RAMIE on mill equipment

Evaluating the processing of ramie fiber on standard equipment[1]

by James L. Taylor and Arthur M. Herron
Engineering Experiment Station
Georgia Institute of Technology

Exclusive

ALTHOUGH ramie is one of the oldest and strongest natural fibers known, its commercial utilization in the spinning of yarns has been very limited because of the cost of preparing the fiber and the difficulty in processing fiber into yarns. Many areas in the United States are suitable for the growth of the plant from which the fiber is obtained. Areas adjacent to the Gulf of Mexico and, in particular, in the Everglades of Florida offer conditions conducive to the growth of the bast fiber plant, species *Boehemeria*.

In recent years mechanical harvesting and decorticating (separation of the fibrous portion from the bark and pithy interior) methods have been devised which lessen the labor cost in preparing the fiber for market. A summary of these developments is contained in USDA Agricultural Information Bulletin No. 156, December 1956.

Many of the areas suitable for growth of ramie are also particularly suited for winter growth of vegetables. During the summer months the labor force required for the harvest of these vegetables must seek other activity. Employment of the labor force in the production of ramie fiber in this off-season would benefit the economy of these regions. Accordingly, this investigation was undertaken to develop methods for processing ramie into single yarns of optimum structure and quality on selected types of standard staple fiber-processing equipment. The specific objectives of this investigation were:

1. Determination of the effect of selected softeners or lubricants on the processing efficiency of selected staple lengths of ramie.
2. Determination of the most practical methods of separating degummed staple ramie fibers.
3. Determination of the finest yarns (and their construction) which can be spun satisfactorily from selected staple lengths of ramie fiber on standard textile equipment.
4. Determination of the staple lengths of ramie which can be sat-

[1]A report of work done at Georgia Institute of Technology under contract with the U. S. Department of Agriculture and authorized by the Research and Marketing Act of 1946. The contract was supervised by the Southern Utilization Research and Development Division of the Agricultural Research Service.

This Article in Brief

■ THIS IS A REPORT of processing trials to develop methods for processing staple ramie fiber (Florida ramie) into yarns using standard equipment. Employment of a substantive type chemical softening agent was found to improve the handle of the fiber and impart improved drafting properties. Electrostatic influences in fiber processing on the modified cotton system were virtually eliminated by appropriate fiber softener treatment.

Commercially practical yarn manufacture using standard equipment was not attained, however, in exhaustive trials using (1) a variety of cut staple lengths ranging from 1½ to 3 inches; (2) a variety of chemical softener treatments; (3) different lots of ramie in which the degumming treatment was varied to improve removal of gums; and (4) different yarn manufacturing systems, viz., the modified cotton system, employing different roller drafting systems, and the woolen system.

Satisfactory separation, with a minimum of fiber breakage, of ribbons of degummed ramie was obtained using standard equipment. A tendency of the ramie fibers to adhere to one another and resist roller drafting presented a major barrier to successful yarn manufacture. Poor continuity in the various yarn manufacture processes and linear irregularity of roving and yarns precluded determination of satisfactory ramie yarn manufacturing methods and constructions.

Exploratory investigation of processing characteristics of staple ramie using another fiber as a carrier showed promise of considerable improvement in product uniformity and processing continuity.

isfactorily processed into selected yarn numbers on standard textile equipment.

Use of ramie textiles by the ancient Egyptians has been reported, and writings by Chinese report use of ramie fabrics as far back as the fifth century B. C. The difficulties of economical production of satisfactory yarns of ramie have limited its use over the passage of years. The development of mechanical planting, harvesting, and decorticating methods was expected to enhance the commercial utility of ramie fiber for yarn manufacture in the United States.

Ramie, a cellulosic fiber, is reputed to be among the strongest of the natural fibers. Investigators report a considerable increase in fiber strength when wet, a characteristic which distinguishes ramie from most other fibers. Its high luster and resistance against micro-organisms are reported to be other attributes. The single fibers from the plant, averaging 6 inches and ranging up to 24 inches in length, may be cut by mechanical methods to desired staple length. Thus it would appear that yarn might be manufactured with standard fiber-processing equipment used in the textile industry in the United States.

TABLE 1. Softeners for Processing Comparison

Sample Number	Softener Applied	Concentration Based on Volume of Bath %	Ionic Nature
S-1	Soromine AT	2	Cationic-Anionic[2]
S-2	Soromine AL	2	Cationic-Anionic[2]
S-3	Soromine BNS	2	Cationic
S-4	Soromine BSS	2	Cationic
S-5	Arko GP	2	Cationic
S-6	Arko NI	2	Nonionic
S-7	Paramine TA	2	Cationic
S-8	Nopcotex B	2	Nonionic
S-9	Nopcotex H	2	Cationic
S-10	Nopcov	2	Anionic
S-11	AtcoWax JN	2	Nonionic
S-12	Velvetol AF	2	Cationic
S-13	Avitex R	2	Cationic
S-14	Avitex ML	0.5	Cationic
S-15	Avitex MLF	0.5	Cationic
S-16	Masury-Young's SSS[1]	2	Anionic
S-17	Avitex C[1]	2	Anionic
S-18	Avitex C[1]	2	Anionic

[1]Samples tested to provide a basis for comparison. Initial screening indicated fiber softened with these agents was harsh.

[2]Ampholytic—cationic in acidic medium, anionic in alkaline medium.

Mill Processing. Textile processing of ramie requires separation of the ribbons of fiber obtained from the decortication process into single fibers. The various gums and pectins holding the fibers together are removed by a variety of processes chiefly involving treatment with caustic soda and soap or detergent. Acid or enzymatic degumming as well as excess caustic in degumming have been found to weaken the fiber. The quality of the fiber, the adequacy of decortication and the technique in degumming have been reported to influence processing of ramie into yarns.

For yarn manufacture trials in this investigation, the degumming process adopted by Newport Industries, involving treatment in a pressure kier under 80 pounds (psig) pressure using two stages of caustic, sodium sulfite, and a commercial detergent treatment, was taken to be the practical method. Newport Industries was reported to have degummed and marketed commercially some 200,000 pounds of ramie fiber in 1954. In addition, approximately nine times this quantity of decorticated, but not degummed fiber, was reported to have been exported from ramie grown on Newport Industries' Everglades acreage during the same period.

Difficulties in the processing of staple ramie fiber into yarns have been reported by various investigators and are believed, generally, to be due to:

1. Static electricity in processing,
2. The harsh, brittle, and stiff nature of the fiber,
3. Coarseness of the fiber (large diameter, etc.),
4. Poor fiber cohesion, attributed to its smooth surface,
5. Poor drafting properties in attenuation to yarns, and/or
6. Various other detriments (fiber breakage, weakened fiber, etc.).

In this investigation it was believed that the use of proper chemical agents would furnish sufficient fiber lubrication to minimize these objectionable qualities.

Extensive investigation was made into the influence on the handle and the processing properties of some forty-odd different lots of ramie fiber degummed at Everglades Experiment Station, Belle Glade, Fla. The formulation found by Newport Industries to be least detrimental to fiber strength was used. Variation in the basic formulation, as concerns mechanical and chemical influences, in pressure-kier-degumming of ramie fiber were made in efforts to obtain fiber of satisfactory yarn-manufacturing quality.

Influence of Softeners. Screening trials were conducted on the softening influence of chemical agents on ramie fiber. Eighty-nine samples of various agents supplied by 20 chemical manufacturers, in response to inquiry as to softening agents for ramie fiber, were applied and appraised as to softening influence. Samples, approximating one ounce each, were treated in a 2 per cent solution of the agents then dried, carded, and appraised as to cohesion and fly during carding and as to handle compared to untreated cotton fiber.

From this initial screening 16 different agents *(Table 1)* were selected for yarn manufacture processing trials on the modified cotton system. Different lots of fiber

TABLE 2. Instron Sliver Drag vs Processing Quality

Sample Identification Number	Sample Mean Weight (Grn)	Drag Mean Peak (Grm)	Peak Load Drag Factor[1] (Peak/Wt) (x 10)	Work Integral: Drag Mean (Grm-In.)	Work Integral: Drag Work Factor[2] (Grm-In./Grn) (x 10)	Process Quality Points[3]	Hand[4]
S-1	8.4	145	173	469	559	4 2 3	3
S-2	8.4	125	149	419	498	3 2 3	3
S-3	8.5	137	162	467	549	3 2 2	4
S-4	9.4	179	190	556	591	4 2 2	3
S-5	8.2	134	164	439	533	1 1 2	2
S-6	8.4	297	354	918	1090	0 1 1	1
S-7	9.6	153	159	467	486	2 4 3	5
S-8	9.3	166	179	694	746	1 2 2	3
S-9	8.9	157	177	546	612	2 1 3	5
S-10	8.5	154	181	460	542	2 2 2	3
S-11	8.7	132	154	432	496	2 2 3	4
S-12	9.4	135	143	425	452	2 2 2	4
S-13	9.4	131	140	391	416	1 2 2	3
S-14	8.6	145	169	519	602	2 2 2	3
S-15	9.7	185	191	585	602	0 1 1	3
S-16	7.5	168	224	625	833	0 0 1	1
S-17	8.5	142	167	481	565	2 2 2	3
S-18	9.8	141	144	389	397	0 1 1	4
Unsoft	9.7	604	620	1288	1322	0 0 1	1
Cotton	8.6	120	140	714	830	5 4 4	6

[1]Drag factor computed by dividing mean drag peak value by weight of sample of sliver (in grains).

[2]Drag work factor computed by dividing mean drag work integral by weight of sliver sample (in grains).

[3]Process quality points assigned on basis of observations in manufacturing trials; first digit denotes spinning quality, second digit denotes roving quality, third digit denotes over-all processing quality. Quality points assigned on following basis: 0-impractical, 1-poor, 2-fair, 3-good, 4-excellent, 5-superior.

[4]Hand appraisal: Cotton = 6, Unsoftened staple ramie = 1.

from a single degumming batch (in a 400-pound-pressure kier) were treated at Everglades Experiment Station in their 13-pound-capacity experimental kier. Ten-pound lots of degummed ramie were softened, using a 2 per cent solution of each selected surfactant, dried, and opened. Five pounds of each lot were then processed at Georiga Tech through picking, carding, drawing, roving, and spinning equipment.

Appraisal made of processing quality is indicated in *Table 2*. In addition, measurements were made of the interfiber friction as evidenced by the drag exerted in separating samples of card sliver *(Table 2)* using an Instron Tensile Tester.[5] On this basis three surfactants were selected for fiber treatment for yarn manufacture trials.

To obtain optimum uniformity (by large lot processing) in successive stages of yarn manufacture, three lots of approximately 100 pounds each were treated with (1) an anionic softener, Avitex C,[5] (2) a cationic softener, Soromine BSS,[6] and (3) an ampholytic softener, Soromine AT.[6] These differently softened lots of ramie were processed through yarn manufacture and compared as to performance.

Processing of unsoftened ramie was wholly impractical. The fibers were compacted to a tape-like ribbon by card and drawing calender rolls and showed marked resistance to drafting. Prohibitive static and fiber fly were found. Most of the softeners produced softening and lubrication which improved the drafting performance and virtually eliminated static influences.

Optimum softening was obtained through the use of an ampholytic surfactant, Soromine AT. Less compacting in card and drawing sliver was obtained but the reduction was not sufficient to enable commercially practical processing.

Influence of Variations in Degumming Process. Investigation was made as to the influence of variations in the degumming process on yarn manufacture. Degumming trials were conducted at Everglades Experiment Station in efforts to obtain a degree of degumming which would make spinning of yarns practicable. Variations in the washing of the ramie after boiling in caustic were incorporated when it was found that a sample of Newport Industries' "low-ash ramie" showed superior spinning capability. "Low-ash ramie" was found as residue from production of some previous year.

Current degumming production at Everglades Experiment Station was found to contain approximately five times as much ash, principally in the form of calcium

[5]/Use of a company and/or product name does not imply approval or recommendation of the product to the exclusion of others which may also be suitable.

[6]/Du Pont registered trademark.

[6]/General Aniline and Film Corp. registered trademark.

TABLE 3. Uniformity Measurements on Ramie Stock in Process

Process	Ramie Identification	Type Measurement	Typical Variation
Picking	Bulk, high-pressure degummed 2½-inch staple from Everglades Exp. Sta. Three differently softened 100-pound lots, 20-pound lot of unsoftened ramie	Coefficient of Variation (CV) in 10 successive yards of lap. Saco-Lowell Lap meter	Softened: CV—2.20%-3.23% Unsoftened: CV—7.05%
Carding	Same as above	Sliver, mean range of variation (R) in 5 yards using Uster evenness tester recorder chart	R—22.8%-31.1%
Drawing	Same as above	Sliver, mean range of variation (R) in 5 yards using a Uster evenness tester recorder chart	R—48.6-83.6%
Roving	Same as above, roving counts ranged from 1.14 to 1.46 hank roving	Roving, mean range of variation (R) in series of 10-yard tests using a Uster evenness tester recorder chart. Long term variation made measure of mean linear unevenness (U) impractical	R—120.6%-150.5%
	Georgia Tech laboratory-degummed 3-inch staple ramie, 1.50 hank roving	Roving, mean range of variation (R) in series of 10-yard tests using a Uster evenness tester recorder chart	R—82.0%
	Georgia Tech laboratory-degummed 3-inch staple ramie, 1.50 hank roving	Mean linear unevenness (U) by use of Uster and integrator	U—20.1%
	Blend of 25% high pressure degummed 3-inch ramie and 75% 2½-inch, 3-denier Zefran, 2.60 hank roving	Roving, mean range of variation (R) in series of 10-yard tests using Uster. Mean linear unevenness (U) by use of Uster and integrator	R—93.0% U—14.3%
	Blend of 40% 1½-inch high pressure degummed ramie and 60% 1½-inch, 3-denier nylon staple, 2.60 hank roving	Mean range of variation (R) in series of 10-yard tests using Uster charts. Mean linear unevenness (U) by use of Uster and integrator	R—63.4% U—10.1%
	Blend of 75% 2½-inch high pressure degummed ramie and 25% 15/16-inch cotton, 1.20 hank roving	Mean range of variation (R) in series of 10-yard tests using Uster charts	R—91.4%

(Continued on opposite page)

salts. Inclusion of acid washing lessened the ash content but the objectionable compacting and resistance to drafting was still evident.

In the belief that loosened, but inadequately removed gums accounted for this character, degumming trials were conducted at Georgia Tech using an atmospheric pressure treatment with caustic soda and soap in a 50-pound-capacity raw stock dyeing machine. Extensive washing with a nonionic detergent and with acidic rinse water produced ramie staple with a diminished compacting tendency and improved drafting characteristics.

Methods of Separating Degummed Ramie Fibers. Satisfactory separation of the bundles of staple ramie following degumming was obtained at Everglades Experiment Station using SRRL opening equipment followed by carding on a Proctor and Schwartz card. Some fiber breakage was evident. This breakage could not be directly attributed to the opening and carding technique alone. The degumming treatment possibly had some effect as well. The working length of 2½-inch staple ramie from Florida degumming and opening was found to be 1¾ inches.

Opening and separation of the bundles of fiber from degumming at Georgia Tech was accomplished very satisfactorily by a single pass

TABLE 3 (Continued). Uniformity Measurements on Ramie Stock in Process

Process	Ramie Identification	Type Measurement	Typical Variation
Yarn Spinning	Bulk, high pressure degummed 2½-inch staple from Everglades Exp. Sta. Three differently softened 100-pound lots. 8/1 yarn (cotton counts)	Mean range of variation (R) in series of 10-yard tests using Uster charts. (Poor continuity)	R—130.2%-156.0%
	Georgia Tech laboratory-degummed 3-inch ramie, 8/1 yarn (cotton counts)	Mean range of variation (R) in series of 10-yard tests using Uster charts. Mean linear unevenness (U) by use of Uster and integrator	R—134.3% U—27.7%
	Blend—40% 1½-inch high pressure degummed ramie and 60% 1½-inch 3-denier nylon staple, 20/1 yarn (cotton counts)	Mean range of variation (R) in 10-yard test using Uster. Mean linear unevenness by use of Uster and integrator	R—114.4% U—17.3%

Note 1—Coefficient of variation in picker lap was computed by approved statistical method using weights of 10 successive yards as obtained using a Saco-Lowell lap meter. Lap used was selected after picker feed had been stabilized. Commonly accepted value for uniform lap made of cotton ranges from 1.0 to 1.2 per cent (CV).

Mean range of variation was computed using the technique cited by the manufacturer, Uster Corp., in their *Instruction Book for the Uster Evenness Tester.*

Mean linear unevenness (U) was computed using ten successive integrator values at half-minute intervals as recommended by the manufacturer, reference as cited above.

Note 2—In the absence of published Uster standards applicable to staple ramie fiber products comparative values for carded cotton are cited below. These values were extracted from the *Instruction Book for the Uster Eveness Tester,* "Standards for Uniformity for Carded Cotton Fiber," for approximately equivalent roving and yarn counts to those cited in the Table above.

	R Mean range of variation			U Mean linear irregularity		
	Very Even (%)	Average (%)	Uneven (%)	Very Even (%)	Average (%)	Uneven (%)
Card sliver	8	11	15	2.5	4	5-up
Drawing sliver	13	20	30	2.5	4	6-up
Roving 0.6-1.50	23	32	45	4.5	6	8-up
Roving 1.6-3.0	23	35	50	5	6.5	9-up
Roving (combed) 6-9	23	35	50			
Yarn 5s				8.5	10.5	14-up
Yarn 10s				10.5	12.5	17-up
Yarn 16s	71	88	110	12	15	18.5-up
Yarn 20s	74	91	115	13	16	20-up

of the fiber through a wool-blending picker, followed by carding on the breaker section of a Davis & Furber wool card (with garnett breast and Bramwell feeder). Opening of 25 pounds per hour was obtained. Optimum separation with a minimum of fiber breakage was obtained by processing the fiber while it contained more moisture than due to normal regain.

In drawing, roving, and spinning processes the working length (roll spacing) of 3-inch staple ramie was found to be 3 inches. This working length was obtained by extensive experimentation to obtain optimum fiber control. It was thus apparent that a minimum of fiber breakage occurred.

Spinning Yarns of Staple Ramie. Although chemical softening afforded soft sliver with a measure of loft, poor continuity in roving and yarn spinning of Florida-degummed ramie made spinning of satisfactory yarns impractical when using the modified cotton system. Spinning tests on a range of yarn counts from 5/1 to 10/1 in a variety of constructions were similarly unsuccessful. Poor cohesion of the fibers in roving and yarn made it necessary to employ high twist multiples of 1.10 in roving and 4.50 or greater in yarn.

Irregularity of the stock from previous stages *(Tables 3* and *4)* and from uneven drafting produced thick and thin places in roving and yarn. Frequently these were of sufficient magnitude to cause a break-out. Trials using different drafting systems were inconclusive as to their influence. The poor processing quality obtained in all cases made comparison impractical.

Yarn-manufacturing trials were conducted on a variety of modified cotton system equipment as follows:

Picking. Picking was accomplished using a one-process, single-beater, synthetic-fiber picker equipped with a modified Kirschner beater and two tandem blending feeders. Processing was conducted using a beater speed of 850 rpm and fan speed of 1700 rpm.

Carding. A roller-top card with three worker-stripper pairs and fancy roll above the licker-in was used for carding trials. This card was equipped with a feed plate with a 1½-inch nose.

Drawing. For drawframe processing a variety of machines were employed. Two different types of 4-roll drawing frames with fluted metallic top rolls were employed to a limited extent. Optimum draw frame processing perform-

TABLE 4. Ramie Yarn Breaking Strengths

Identification		Mean Single Strand Break Strength (Lb)	Coefficient of Variation (%)	Mean Elongation (%)
Degumming Method	Softener			
Modified Cotton System				
HPEES	Avitex C 8/1 yarn, 4.50 TM	2.09	15.38	3.53
HPEES	Soromine BSS 8/1 yarn, 4.50 TM	1.87	21.50	3.22
APGT	Soromine AT 8/1 yarn, 6.25 TM	1.90	15.79	3.55
APGT	Soromine AT 7/1 yarn, 6.75 TM	2.57	19.80	3.50
Woolen System				
HPEES	Soromine AT 3.8/1 yarn, 4.25 TM	3.50	5.71	4.12
HPEES	Soromine AT 6.0/1 yarn, 3.25 TM	1.53	13.07	4.91
HPEES	Soromine AT 3.0/1 yarn, 4.60 TM	3.00	13.33	5.62
HPEES	Soromine AT 1.5/1 yarn, 6.50 TM	7.11	14.18	9.23

Key: HPEES—High-pressure-degumming process employed by Everglades Experiment Station.

APGT—Atmospheric-pressure-degumming process employed in the Laboratory at Georgia Tech.

TM—Yarn Twist Multiplier (twist factor).

NOTE: Coefficient of variation calculated by determination of standard deviation of individual test results and dividing it by the mean breaking strength.

ance was obtained using a 4-over-5-roll frame with synthetic-covered top rolls and a revolving top clearer.

In trials using 3-inch cut ramie staple the back top roll was removed to permit spacing the rolls 3 inches apart. Thus a 3-over-4-roll system was employed with the long staple fiber.

Roving. For processing 1½-inch staple ramie a roving frame with the Shaw apron drafting system was used. On longer staple ramie a roving frame with a 3-over-4-roll Shaw drafting system was used.

Spinning. Spinning trials on 2½-inch and shorter staple ramie were made using both the Saco-Lowell Z and the Whitin Casablancas drafting systems. For 3-inch staple ramie, however, the Casablancas drafting system using worsted-type apron cradles was found most successful.

Yarn manufacture using laboratory-degummed fiber at Georgia Tech was accomplished with some improvement in processing quality. An indicated ends-down rate of 700 to 900 per 1000 spindle hours was the best that was obtained even on the highest qualtiy of degummed ramie. Twist multiples of 6.25 to 7.50 were found to be the optimum construction in spinning of 8/1 and 7/1 yarn. Manufacture of either coarser or finer numbers produced equivalent or higher ends-down rate.

In all cases the stiff ramie fibers were observed to resist drafting. On the roving and spinning frames many of these fibers were ejected to the side of the mass of fibers being twisted. In spinning, these fibers subsequently became entwined in the yarn as it went through the thread guide and frequently caused a break-out.

Woolen system processing of staple ramie was attempted; however, poor continuity in the roping was encountered. Use of oil, use of water spray on softened ramie, and use of the dry fiber showed no significant difference in carding efficiency. While satisfactory card condenser rubbing resulted in each case (to produce roping with fair cohesion), occurrence of frequent thick slubs caused a break-out in the roping at the guides before the jack spool.

Ramie yarns as fine as 6/1 (cotton counts) were spun on a woolen-spinning frame. To minimize break-outs during spinning the maximum draft found practical was 1.12. Many of the slubs which passed through the guides on the card caused break-outs in spinning. The comparatively lofty nature of the opened ramie caused marked irregularity in feeding by a Bramwell feeder.

The woolen system trials were discontinued when it was concluded that only relatively coarse yarn numbers could be spun. The processing continuity and strength of the yarns were inferior to that obtained on the modified cotton system.

Spinning of Yarns Using Another Fiber as a Carrier. Although no provision was made for blending other fibers with ramie in this investigation, limited exploratory blending trials were made. When it became apparent with certain lots of degummed ramie that spinning of satisfactory ramie yarns was impractical, trials were conducted wherein 25 per cent 15/16-inch cotton was blended with 1¾-inch ramie on a 4-over-5 drawing frame. Continuity in spinning of roving and yarns (10/1 cotton counts) was considerably improved in the limited trials conducted.

Blending of 50 per cent 1½-inch Dacron and 50 per cent 1¾-inch ramie by doubling laps on the synthetic picker feed apron produced an apparently homogeneous blend. In spinning 10/1 yarn using a twist factor of 4.00, an indicated ends-down rate of 1600 per 1000 spindle hours was observed. Although such continuity appears commercially impractical, this was a considerable improvement as compared to all-ramie spinning trials with the same lot of fiber.

A similar technique employed to produce a blend of 40 per cent 1½-inch staple ramie and 60 per cent 1½-inch, 3-denier nylon enable spinning of 21/1 yarn. Trials revealed an indicated ends-down rate of 667 per 1000 spindle hours

based on 51 spindle hours of test. The resultant yarn exhibited the characteristic hairy nature of all-ramie yarns. A 50-50 blend of 3-inch ramie with 2½-inch, 3-denier nylon was used to produce 18/1 yarn. An indicated ends-down rate of 561 per 1000 spindle hours was observed in 264 spindle hours of test.

Limited spinning trials using a blend of 25 per cent 3-inch staple ramie with 75 per cent 2½-inch staple Zefran showed marked improvement in continuity. This blend was made by a single pass of bulk fiber through a wool-blending picker followed by processing on a Whitin one-process picker. Production of 21/1 yarn with good continuity was obtained although the ramie alone exhibited inferior continuity in the spinning of 8/1 yarn. An unorthodox blending of 75 per cent ramie and 25 per cent Zefran by doubling one end of all-ramie roving with one end of ramie-Zefran roving in the spinning frame creel also showed good continuity in spinning of 21/1 yarn.

Influence of Staple Length on Spinning. Determination of the optimum construction and yarn counts for various staple lengths was impractical due to the over-all unsatisfactory performance of the degummed ramie used. Processing trials using 1½- and 2-inch staple ramie showed inferior cohesion in the card web and in spinning of roving. Poor continuity and excessive nonuniformity made spinning of yarns impractical.

In spinning of ramie yarns using 2½-inch cut staple ramie (1¾-inch working length due to fiber breakage) no practical construction was found because of poor continuity. The degumming process is believed to exert a major influence on the difficulties in processing the several lots of fiber tested.

Optimum continuity in processing and improved fiber behavior were obtained through use of 3-inch staple ramie degummed in a raw stock dyeing machine at Georgia Tech. An indicated ends-down rate between 700 and 900 per 1000 spindle hours was the best continuity obtained in spinning of all-ramie yarns. High twist (6.25 TM) was necessary to obtain even this degree of continuity in the spinning of 8/1 yarn.

Conclusions. The significance of the conclusions enumerated below is, of necessity, somewhat qualified because of the many variables observed. Due to the over-all unsatisfactory performance of all-ramie staple in yarn manufacture, extensive spinning trials were impractical. Nonetheless, the following conclusions appear warranted on the basis of the degummed ramie tested:

1. Employment of chemical agents for fiber softening serves to minimize certain obstacles to yarn manufacture processing, viz.: static in processing may be virtually eliminated by the use of a substantive type surfactant; improved drafting properties may be obtained by the surface lubrication afforded variously degummed lots of staple ramie; adhesion of fibers to one another in sliver form, as evidenced by compacting, may be somewhat reduced in softened fiber; the extent of degumming governs the efficacy of chemical softening for yarn manufacture as well as the concentration of softener required in wet fiber treatment.

2. Yarn manufacture of all-ramie yarns from Florida ramie as presently available in degummed form does not appear commercially practical. Poor processing continuity in roving and yarns of even comparatively coarse counts makes commercial spinning uneconomic. Spinning of yarn numbers finer than 10/1 is impractical. Woolen system spinning of ramie yarns is unsuitable due to poor continuity and generation of slubs during carding.

3. A characteristic of yarns containing ramie is a hairy surface and high incidence of slubs of varying size.

4. High twist is necessary to obtain optimum cohesion in spinning roving and yarns comprised of staple ramie. The extent of removal of gums from the ramie influences the determination of optimum construction of yarns and roving. The extent of degumming required for commercially practical yarn manufacture was not found in this investigation.

5. Progressively increasing irregularity in the product of different stages of yarn manufacture is characteristic of staple ramie, and accounts for much of the difficulty in producing quality yarns of any number.

6. Use of long staple ramie affords greater cohesion in successive stages of staple fiber yarn manufacture. Inadequate cohesion in carding is encountered with the degummed ramie such as tested when the working staple length was less than 1¾ inches.

7. The most practical technique for opening and separation of bundles of cut-staple ramie following degumming appears to be opening on a wool-blending picker followed by carding on a wool card breaker section with garnett breast and Bramwell feeder. For processing on the modified cotton system preparation of picker laps from this opened fiber and carding on a roller top card enables satisfactory separation, though not always to individual fibers, as presently degummed.

8. Employment of another fiber with ramie may sufficiently improve processing characteristics to make yarn manufacture commercially practical in spinning of yarns ranging from 10/1 to 20/1 or finer for specific end uses. Optimum blend proportions for these other fibers have not been determined.

Acknowledgments. Appreciation is expressed to other members of the staff at Georgia Tech, to Dr. R. V. Allison and members of the staff of Everglades Experiment Station of the University of Florida, and to officials of Agricultural Research Service, USDA, for their assistance and cooperation in the conduct of this investigation.

NEXT MONTH

First installment of papers presented at the 1960 Cotton Research Clinic

Georgians discuss

- ★ ***metallic clothing***
- ★ ***new-crop cottons***
- ★ ***split-top flats***
- ★ ***granular cards***
- ★ ***handling heavy laps***
- ★ ***lap scales***
- ★ ***large coilers***

Staff report

THE TEXTILE Operating Executives of Georgia gathered at the A. French Textile School, Georgia Institute of Technology, on 23 April 1960 to discuss their mutual carding and spinning problems. Approximately 200 attended.

Metallic Clothing. The ten mills responding on this topic replied without exception that the metallic clothing reduced nep count, and one mill added that the neps also were smaller. Of particular significance is the fact that the results were obtained without correlation between carding speed and nep count or between cotton grade and nep count.

The mills reported using grades LM, SLM, SLMB, SLB, and one uses a light spot grade. Not all plants reported staple, but the range given runs from 15/16″ to 1 1/32″; carding speeds range from a low of 8.0 lb per hour to 17 at 100%; and nep reduction ranges from "fewer and smaller" to a flat 2/3.

Five plants reported increasing production, with the highest reported being 50% without sacrifice of quality. Another plant observed that production "could be increased." Three plants did not increase production, and two did not answer that portion of the question. Apparently, the clothing is capable of increasing production and lowering nep counts. But there are other benefits to be brought out.

In five instances the break factor remains the same; in two cases it increased a small amount; and in two cases there are no results given.

Yarn evenness is improved in five cases, remains unchanged in three instances; and two mills report no results.

Waste is down in eight cases; two mills could report no results. The waste reduction in some instances is dramatic: *Mill C* (12.5 and 9.2 lb/hr, SLM) reports a 1.75% reduction in total waste; *Mill E* (SLM to LM, 17 lb/hr @ 100%) has 0.64% less flat strips, 0.51% less reworkable waste, with card fly remaining the same; *Mill J* reports a 59% decrease in strips —metallic clothing gives no cylinder-card strips—and a reduction in sliver waste and observes that fly has increased in carding but not in spinning; *Mill Q* reports a 36.4% waste reduction and notices no difference in carding and spinning fly; *Mill V* has reduced flat strips by 30% but has lost the advantage in a corresponding increase in licker-in fly. But the firm has an over-all waste reduction of 12% and feels that limited experience precludes conclusive results.

Ends down in spinning are lower in three plants, remain the same in three, are higher in one, and three mills report no figures on that element.

Fly is up in carding and spinning in four plants, remains about the same in two, and three mills have no observations to report. *Mill T* remains noncommital, as the firm began using a fiber additive at the time the clothing was installed. One firm finds no fly change in carding or spinning but notices a shedding increase in later processes.

During the discussions on metallic clothing performance, formalities disappeared as interested operating executives departed from the "script" and began throwing their own questions about. Thus the questioner and the answerer are not identifiable:

Q. "Are these comparisons based on new fillet or on standard 'run-of-the-mill' clothing?"

A. "We set up 10 cards on metallic clothing and reworked five others to a good-as-new condition to act as controls. We made con-

TABLE 1
New-Crop Cotton Performance
(Comparisons made with old-crop cotton)

Mill	Nep Count Better	Nep Count Worse	Break Factor Better	Break Factor Worse	Spinning ends-down Better	Spinning ends-down Worse	Loom Stops Better	Loom Stops Worse	Remarks
B	(no comment)		(no change)		(no comment)		(no comment)		Trashier
C		✓		✓		✓		✓	——
M		✓		✓		✓		✓	Seems over-dried and over-ginned
Q		✓		✓	(no change)			✓	Seems over-ginned and of shorter staple
U	(no change)			✓		✓	(no looms)		Seems over-dried
H	(no data)			✓		✓		✓	Seems over-dried and over-ginned—sheds worse

ditions approximately the same for the two systems just to give ourselves a reliable comparison."

Q. "Are perforated screens being used by anyone?"

A. "Yes."

Q. "Is anybody bothered with snowballing?"

A. "Yes."

Q. "Is it necessary to redesign the screens?"

A. "No."

A. "But screens have a lot to do with good carding."

A. "We find the longer the screen, the better the draft control, the fewer the snowballs."

Q. "Is anybody running part waste mixes on metallics?"

A. "About two-thirds our production is on part-waste mixes."

A. "We run part strips and part comber noils."

Q. "How is metallic performance on that?"

A. "Very satisfactory."

Q. "Has anybody been troubled with 'flaking'?"

A. "We have. It can be controlled by making sure the screens are 'perfect circle' and are set accurately. It is a sort of cloudy web."

Someone volunteered: "Better not let any chokes go through or you will have major screen damage."

Q. "How are you going to keep all chokes out?"

A. "We bolt our feed rolls down so they cannot rise and allow plucking."

Q. "What if a washer or nut tried to go under the feed roll? Wouldn't you have to replace the roll?"

A. "We find that the roll 'spits' or pushes back those things."

Q. "Does it hurt staple?"

A. "No. And it keeps our screen repairs down, too."

Q. "Have you tried spring-loading the rolls in place of weights?"

A. "Yes. But spring loading still let lumps through once in a while."

Q. "Don't you get anything damaged from bolting them down?"

A. "Nothing. We feel we had rather replace a feed roll, if it comes to that, than to repair a whole card."

(On p. 151 there is a kink devoted to bolting down card feed rolls.—*The Editors*)

Split-Top Flats. Five plants have experience to report, and four of those have seen a decrease in nep count. One plant has experienced no reduction.

Production has not been increased, although *Mill D* holds the belief that an increase of some 5% to 7% could be made without lowering quality.

Four of the five get fewer flat strips as a result, and the fifth mill gets more. One of the plants observed that the strips were both darker in color and loaded with short fiber.

The flats are ground on five different schedules: three months; six months; yearly; and every 40 days. The fifth plant involved has been running some of their split tops for 18 months and reports that the flats have not been ground and do not appear to need it.

The granular top card came under discussion as an unscheduled part of the program. *Willis James,* Summerville Mfg. Co.; *Lee Wynn,* Canton Cotton Mills; *Bob Gilbert,* Pepperell Mfg. Co., Lindale; and *Mac Myers,* Riegel Textile Corp., Trion, comprised an informal panel to answer questions from a prepared list and from the floor. Each of these men had conducted studies on the granular card, and *Lee Wynn* had carried out his studies on a granular card fitted with metallic clothing. All others carried out the test using flexible clothing. A summary of the findings follows:

Web Appearance. More trash than on conventional cards.

Carding Speed. Same as for regular cards.

Lint, Dust, Fly. Not established, since other cards added their own. But in one instance there definitely was too much under the card for the quality of the cotton being processed.

Snowballing. This was not a problem with two, but one firm

Leading the discussion on carding topics was **Dan Melton** of Walton Cotton Mills. **Willis James** of Summerville Mfg. Co., general chairman of the organization and a participant in the granular card roundtable, appears at the lower left.

Others who took part in the discussion on sandpaper carding were: top photo—**Bob Gilbert** of Pepperell Mfg. Co., Lindale, and **Lee Wynn** of Canton Cotton Mills; bottom photo (standing)—**Mac Myers** of Riegel Textile Corp., Trion.

TABLE 2
High-Compression Picker Laps

Mill	Lap Weight	Ounces per yard	Lap Diameter	Handling Method	Maintenance Costs
F	76	14.5	19" to 20"	Conveyor	Unknown
G	80.0	14.0	19"	Trucks	Very little[1]
I	82.5	15.0	17" to 18"	Trucks	$30 per month
J	80.0	14.0	18"	Hoist[2]	Unknown
L	52.22[3]	16.71	18"	Trucks	Negligible
O	59.02 to 69.75	17.0	18" to 20"	Trucks	Reasonable
P	60.0	14.5	17"	Trucks	Negligible
Q	65.0	14.75	20"	Trucks	Small[4]
S	58.0	15.5	20"	Trucks	——
U	76.0	14.0	19"	Conveyor	Increased[5]
V	70.0	14.67	18"	Trucks	Unknown

[1]"Very little except 80 T calender gear."
[2]Hoist, with scale attached, lifts laps on truck. Two men lay them on cards.
[3]Pressure applied to calender rack only.
[4]Pressure system maintenance small, but breaking more calender rolls.
[5]Increase is from broken calender rolls and 80 T gears.

TABLE 3
Mill Experience with Large Card and Drawing Coilers

	Card				Drawing	
Mill	Can size (")	Can Capacity (lb)	Handling method	Stripping troubles?	Can size (")	Can capacity (lb)
A	—	—	—	—	15 x 36	23.00
C	18 x 42	38.00	Hand	No	18 x 42	42.00
E	18 x 42	40.00	Truck	Yes	16 x 42	35.00
F	15 x 42	23.00	Hand	No	16 x 42	39.00
G	16 x 36	25.00	Hand	No	16 x 42	34.00
I	16 x 36	24.00	Truck	No	16 x 42	35.00
K	18 x 42	38.00	Floor conveyor	Yes	16 x 42	38.00
N	18 x 42	47.00	Hand	No	16 x 42	35.00
O	18 x 42	42.00	Trucks	No	16 x 42	37.50
P	15 x 42	24.75	Hand	No	12 x 36	18.86
Q	18 x 42	42.50	Truck	No	16 x 42	37.00[1] 34.00[2]
R	16 x 42	30.00	Truck	No	15 x 42	30.00
U	18 x 36	34.00	Hand	No	14 x 36	24.00
V	18 x 42	40.00	Can mounted dollies	No	16 x 42	35

[1]Breaker drawing
[2]Finisher drawing

closed back knife setting from 22/1000" to 17/1000" to help stop it. The same firm found out that a screen set "open" in the center and "close" in the back helped.

Nep Size. The number decreased but the size increased until one representative was moved to say, "They could be called lumps instead of neps."

Chokes. Not an inherent difficulty, but one of the plants reported having some through faulty practices. There were no fires, and only one case of loose fiber blowing around cylinder ends. This was traced to using a wrong screen and to letting a fringe roll operate in a too-loose condition.

Waste. Generally this is reduced greatly, by approximately 2/3, since there are no flat strips. But the waste seemed to carry over too much into the sliver. Neither plant felt the quality was sufficient for use in their goods.

In general it may be said that sliver quality was so poor—uniformity, appearance, nep count and size, etc.—that the stock has not been given a spinning test.

When asked, "What are you going to do with the cards now?" one spokesman replied that he planned to switch to metallic clothing and continue with the tests. Another representative "is still working on it," and a third one is undecided.

Q. "Did you experiment with grit sizes?"

A. "We changed grits only to make the situation worse."

Q. "Did you correlate these results with fiber fineness?"

A. "No."

A summary can be drawn, although the panel was emphatic in insisting that the card is not "doomed" because of the findings given. It did its best work when equipped with metallic clothing, reduced card waste over-all, operated at the same production rates as conventional cards, used less power than the conventional machine, weighs several hundred pounds less than the conventional, required less upkeep, and must be given closer settings. On the other hand, the card did not give the quality the testing firms considered necessary for their denims, their twills, their poplins, flannels, gabardines, etc.

Print-Weigh Picker Lap Scales. In a couple of cases no advantages could be found in using this type

scale, so the system was abandoned, and one of the two firms quit using the system through an inability to get all the "gadgets" to work. The three remaining firms contributing to this question consider the system's check-and-balance features most valuable. It has a certain police value that discourages operatives from letting off-weight laps get into production channels. Consequently, some mills find rejects now amounting to 9 to 10 per cent compared to the 4 or 5 formerly experienced.

The laps being produced range in weight from 44 lb (54 yd) to 76 lb (82 yd) and are allowed to vary in weight plus or minus ½ to ¾ lb. Rejects range from the 10% already mentioned to a low of 1½%.

High-Compression Laps. For how much cotton the mills are rolling into each lap, how laps are transported, maintenance costs, etc., see *Table 2.*

Large Card and Drawing Coilers. For how the mills handle their big cans, see *Table 3.* Two mills report difficulty in lifting stripping rolls high enough to clear the high coilers.

After the technical discussions ended the organization held a short business meeting to elect two of members to the executive committee—*J. F. Henderson,* Crystal Springs Bleachery, Chickamauga, and *B. D. Cain, Jr.,* Muscogee Mfg. Co., Columbus, will fill the places vacated by retiring E. J. Hertwig and J. A. Bradshaw.

(The spinning discussion follows next month).

Is your zeolite water softener operating efficiently?

Extract*

■ THE COMMON types of exchange materials used in zeolite softeners together with their exchange capacity and other operating characteristics ar epresented in Tabels I and II. This information can be used as a guide in checking the operation of the zeolite unit to determine whether its efficiency has decreased.

A daily log on softener operation should be maintained to accumulate the necessary data to permit checking of the softener efficiency.

The anticipated loss of exchange-material is a maximum of 3% per year due to mechanical breakdown. With fouling this loss can be seriously increased. While the zeolite mineral is not a capital expense but rather a maintenance item, it nevertheless is important to minimize the cost of operation and a comprehensive program should be followed to assure minimum loss of resin, maximum salt efficiency, and the continuous production of a good quality effluent. Such a program will pay dividends.

Check List. To assure efficient operation of the softener, the following items should be checked:

(1) Quality of the influent water.
(2) The backwash rate and quantity of backwash water used.
(3) Quantity of salt used per regeneration.
(4) Quantity of water softened between regenerations.
(5) Quantity and flow rate of water used for rinsing.
(6) Periodic examination of the softener and exchange material.

The correction of the problem may involve better clarification of the influent water. In some cases, revision of the backwash, regeneration or rinsing cycle, or improvement of the distribution system may be necessary. Perhaps a periodic chemical cleaning with special cleaning agents may be all that is necessary.

(Continued on page 125)

*From a water conditioning data sheet entitled "The Care and Operation of Zeolite Softeners," published by Betz Laboratories, Inc.

TABLE 1 — CHARACTERISTICS OF CATION EXCHANGE MATERIALS

Type of Material	Capacity gr per cu ft	Regenerant lb/kg	Operating pH	Range Temp. F
SILICIOUS BASE				
Processed Greensand	2,500- 3,000	0.35-0.50	6.0- 8.4	135 Max.
High Capacity Greensand	4,000- 5,500	0.35-0.50	6.5- 8.1	110 Max.
Synthetic Gel	7,500-10,000	0.33-0.50	6.8- 8.2	100 Max.
ORGANIC				
Sulfonated Coal	6,000- 7,000	0.45	5.0-10.0	135 Max.
Polystyrene Resin	20,000-30,000	0.25-0.50	5.0-11.0	250 Max.

TABLE II — FLOW RATES IN GALLONS PER SQ FT PER MINUTE

	Backwash Rate	Regen. Rate	Rinse Rate	Oper. Rate
SILICIOUS BASE				
Processed Greensand	9	2.5	5	5
High Capacity Greensand	9	2.5	5	5
Synthetic Gel	4-6	2.5	5	5
ORGANIC				
Sulfonated Coal	6	1.5-3.0	2.5-6	6
Polystyrene Resin	6	2.5	2.5-7	6

How personnel at a 500-employee spun synthetics mill made an enviable safety record—5 million safe man-hours

"Safety is an attitude!"

by Sam O. Brookes*
Personnel Director
J. P. Stevens & Co., Inc.
South Boston, Va.

AT THE beginning of 1955 we instituted a supervised and concentrated effort to put across to our employees that safety is an attitude and safety is up to them. The records show that on February 7, 1955, we started in earnest to accumulate our man-hours.

From February 1955 through October 1955, we accumulated our first million safe man-hours. We reached our second million in September 1956. We reached our third million September 1957. By August 1959 we had reached and surpassed 5 million safe man-hours. It is with justifiable pride that I can say that this record is still going and that it is the top record in J. P. Stevens & Co.'s 48 mills.

Now this record just didn't happen by me sitting back in my office and hoping and wishing and praying that it would happen. On the contrary, it happened through the efforts of our people.

The fellow who keeps the lawn mowed, the loom fixers who keep the looms running, the winder operators who wind the yarn, the cloth graders who inspect the cloth, the shop personnel who repair the machinery, the office force who do the accounting and payroll, the general superintendent who backed the program 100 per cent; our record was achieved through the efforts of all these people.

The program did not stop here, it went right up the line to the general manager of our three mills in South Boston, Va.; Greensboro, N. C.; and Wallace, N. C. It continued through the vice-president in charge of all manufacturing in our synthetics division, the complete board of directors, on to the top man in the company, R. T. Stevens, the president.

All of these people had our record at heart and have supported it whole-heartedly in every way possible. Each of these individuals has made it his responsibility to back our safety record to the nth degree; our progress, our work, and our wants—in any way they could help us. Because of their cooperation, our job was made easier.

Safety Is an Attitude. Once again, I stress that safety is an attitude. It is the attitude of the battery filler putting quills into the loom; she watches out that she doesn't mash her finger; that she doesn't step too near the moving parts of the loom.

It is the attitude of the loom fixer as he tightens the bolts on the loom—that he has proper tools which will not allow the wrench to slip and crack his knuckles or catch his hand in the machinery.

It is the attitude of the cloth doffer as he lifts rolls of cloth to his shoulder and walks with them to the central trucks—that he doesn't strain himself. He knows how to stoop and pick up these rolls of cloth.

It is the attitude of the paymaster as he goes around to pay the people. He is careful not to slip on a slick of grease or trip. He keeps alert.

It is the attitude of the little stenographer as she sits behind her desk pounding her typewriter. She is careful walking to and from offices. If she goes into the mill, she is always careful.

All of these things point to the company's spirit, to the attitude the employees have assumed to make our safety program work.

Safety Committees. We have gone a step further in the safety program by having definite and responsible committees set up at various levels. We have a plant safety committee that is set up for the high level of management at the local plant. I am chairman of this committee, and the plant general superintendent and the department heads throughout the plant are members.

Each department, the weave room, the throwing department, the preparation department, the shop, the cloth room, the shipping and supply departments, has an individual safety committee. There are committees for all three shifts. These committees are formed within the department and the committee members serve for six months, one of the members being elected chairman.

These department safety committees meet, and have a definite safety program. Minutes are taken and published, then they are sent to the plant safety committee. The plant safety committee meets monthly, as do most of the departmental safety committees. A written record is published of the minutes for all meetings. All recommendations of the various departmental safety committees are carried through the plant safety committee and these recommendations and suggestions are acted upon. If not, the individual committees are notified and asked for explanations.

All of these committees working together, looking out for accidents, being alert for any hazards, being ready to help any new person become properly indoctrinated in

*From paper presented at the Textile Session during the 47th annual National Safety Congress in Chicago, Ill.

safety, have meant a great deal to our continually growing safety record.

Accident Investigation. Apart from these departmental safety committees and the plant safety committee, we have a separate accident investigating committee. The duties of the accident investigating committee are to investigate thoroughly each accident that occurs requiring a doctor's care for an injured person. This committee is headed by one supervisor and four other members taken from the working force of the mill. We have a committee for this on each shift, but it is headed by the same supervisor. The accident investigating committee has meant a lot in the preservation of our record.

When an accident occurs and the employee is hurt so that he must be sent to the doctor, this committee goes into action. The supervisor in charge of this committee contacts the supervisor of the person who was hurt and arranges a specific hour to talk to the victim. The accident is discussed freely and the supervisor tends to stay in the background, letting the fellow-workers of the employee do most of the talking. They make decisions and recommendations for improvement.

The results of the accident and the decisions of the accident investigating committee are written up in detail and copies forwarded to the plant safety committee. This report may be critical of the injured worker, or it may be critical of the type of machinery the worker used. It may even be critical of our safety program. We might have provided better safety protection for the worker.

In any event, the facts are listed. Everyone concerned has a complete accounting of the accident. This allows us to pin-point the spots throughout the mill that caused or could cause the accident. We try to make corrections to prevent other accidents. This practice has proved invaluable to us and has materially reduced our doctor-cases through eliminating some of the hazards that only a person who had actually been injured could bring to light.

Post Record Weekly. Each week we post on our locked bulletin boards our safe man-hours accumulated at that time. These posters generally consist of an eye-catching cartoon that tends to reach the man or woman on-the-job. They have been most effective.

During the times when the notices concerning the safe man-hours are posted on the bulletin board at the South Boston plant, I will walk through the mill on each shift carrying a handful of silver dollars. I will approach an individual on the job and ask him if he can quote for me the exact number of hours that are listed. If the worker can quote them correctly, I give him a silver dollar.

This is low cost advertising. You would be surprised at the enthusiasm toward this practice, and the looks of the workers' faces after they answer the question correctly and are rewarded with a silver dollar. I do this once every three months and usually give out ten or twelve silver dollars, to two people or so on each shift. This practice pays high dividends, and our people look forward to it by keeping up-to-date with the notices on the bulletin board. While keeping up-to-date on the safe man-hours accumulated, it is easier for them to keep safe attitudes and to be alert.

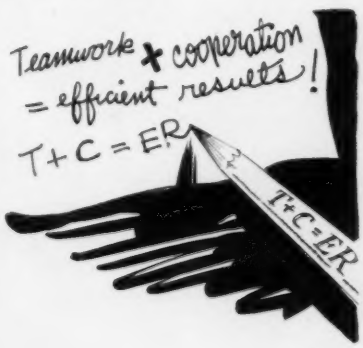
Gifts for All for Each Million Safe Man-hours. Upon accomplishing each million safe man-hours, we have some form of gift we give our employees. These gifts have varied from small plastic squeeze-type coin purses to ball point pens. Sometimes we give pillow cases or Utica-Mohawk sheets (a product of Stevens).

When we reached 5 million safe man-hours last August, we gave the employees a family picnic at the local fairgrounds with barbecued chicken and all the trimmings. This was well received and we had a good turnout. Top officials of the company came down from New York to add their congratulations to the people.

As you can see, all of our efforts are turned towards that one individual in the plant, that one inconspicuous individual who might at any time of day or night commit an unthinking act that could break this magnificent record.

Mill Pencils Utilized. Even the pencils we use throughout the mill, old lead pencils, have something to do with safety in a sense. The pencils have our plant's name, the company's name, and our location inscribed on them. Under that we have these four letters: T + C equals E. R.

Now we want the people to know what that means, we want our new employees to ask what they mean, and we want visitors to our plant to ask what they mean. T + C equals E. R. means: teamwork plus cooperation equals efficient results.



We believe teamwork and cooperation are good healthy signs of safety. If you are cooperating with a person, if you have proper teamwork, then safety goes hand-in-hand with both of these.

Monthly Safety Meeting For Supervisors. On the second Monday of each month we have a meeting of all supervisors for an hour at the local plant. Safety is stressed

NEW

AMERICAN MONORAIL Roving Frame Cleaner

the ONLY Cleaner with INSTANT AUTOMATIC AIR CUT-OFF Anyplace over the frame . . . .

When roving frame stops, air from cleaner stops instantly regardless of position of cleaner. Cleaning resumes when cleaner passes over the next operating frame. This instant cut-off prevents doubling, roving breaks, roving stretch between front and flyer cap, sliver breaks and shredding. Your yarn quality goes up as soon as you install this cleaner.

A famous mill, where this new cleaner is in operation, reports a 70% decrease in slubs introduced during this operation. This permits closer spooler settings and results in higher quality yarn. 80% of normal manual cleaning is eliminated.

Thoroughly cleans — Flyer Caps . . . Tops of Roving Cans . . . Sliver rods and guides . . . Stop motion . . . Alleys.

AMERICAN MONORAIL

Engineered Automatic Cleaning and Handling Systems

OVERHEAD HANDLING EQUIPMENT

1106 EAST 200th STREET CLEVELAND 17, OHIO

MEMBER OF AMERICAN TEXTILE MACHINERY ASSOCIATION

in all of these meetings. We show films or have demonstrations of various safe practices.

Sometimes an employee who has been injured or nearly injured will give an account of his experience.

This has proved most effective as it keeps before the supervisor's mind the importance of safety and the importance the top management places on safety.

Card Game. We also have another gimmick we use to impress our employees, little safety cards. The card reads: "I have just seen you do an unsafe act." The supervisor keeps three or four of them in his pockets. If he sees any worker in the mill doing something in an unsafe manner, he presents this card to him. The worker is then told, "I'm going to check with you in a couple of days and I hope you have gotten rid of that card and have given it to another worker. Kid him along the same line I have kidded you about doing something unsafe."

This creates a lot of interest, and we have seen employees gather together and kid someone who has received two of these cards in one day.

Naturally, all of this is done in fun, and it brings home the idea that everyone at the South Boston plant is working for safety and allowing safety to work for us.

Work Closely with Doctors. Our town of South Boston has a population of just over 6,000. We work closely with our two company doctors and we try to keep them well informed of our safety program at the plant.

When an injured individual requires medical attention, he is given his choice of the two doctors. Upon selection, the employee is accompanied to the doctor by me and his supervisor. Arriving at the hospital, I make it a point of contacting the doctor immediately. I explain the situation to him, and he renders whatever treatment is necessary.

It would really amaze you to hear our employees as they go to one of the doctor's offices to be treated for a cut finger, a mashed toe, a bruised elbow, or something that was serious enough in our opinion to send him there. As they talk to the doctor while he is sewing up or cleansing the wound, or getting something out of an eye, their conversation generally goes this way: "Doc, please fix this up the best you can, because I want to get back down there and go to

work. I sure don't want to break that good record."

The doctors realize, of course, that our first aim is to tend to the person who is hurt, and to provide complete care, regardless of the safety record. It is going to be broken one of these days. If we break it, we'll start another one and beat the old one. This attitude is in effect throughout all the plant.

Lost Time Accident Defined. Now a word about our insurance regulations that determine whether an accident is a lost-time accident or not. If a person working on the first shift is hurt sufficiently on the job not to be able to report for work on his shift the next day, that is a lost-time accident.

However, if the doctor tells John that he can return to work that same day, but to be careful with finger; then John comes back to work that afternoon and duly reports the next morning, this does not break our safety record. So far, fortunately, all of our injuries have been of a nature to permit the employee to return to work the same day and to report for work the following day.

Attitude again plays a large part in this willingness and desire to get back on the job as soon as possible. The pride in the safety record and the pride in being a member of a safe team is quite evident in the employees as they request the doctor to let them get back to work as quickly as possible.

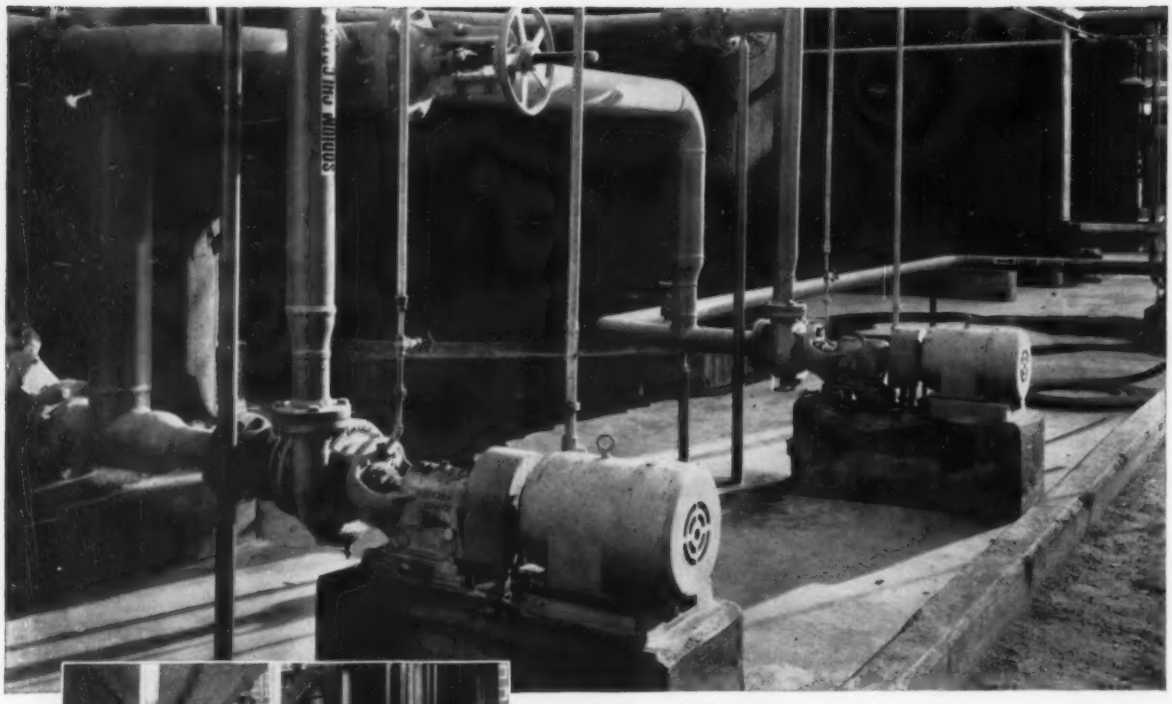
In connection with any of the employees who have been injured, it has been a policy that I, as office manager, and Mr. Patterson, our general superintendent of the local plant to make it a strict point to speak to them with regard to the accident, and to express our concern that they were not severely hurt and were able to return to work.

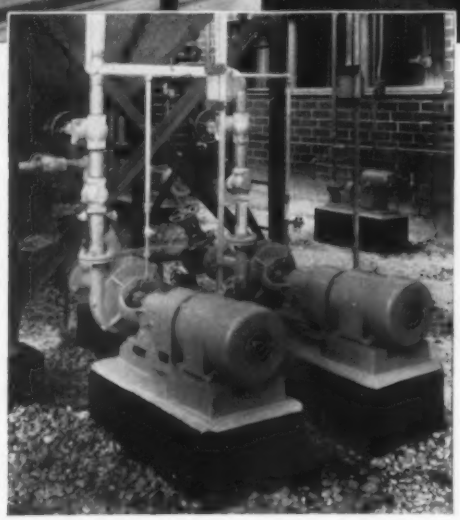
Safety Slogan Contests. As a gimmick to get the workers attention and cooperation focused on our safety program, and on the cartoons and bulletin board notices, we run safety slogan contests. The employees are requested to send in their slogans, which are judged by a committee, and the winners receive cash awards.

This has been effective in the

past, and we look forward to its continued effectiveness.

We have had some good slogans turned in; one of the best I recall was turned in by an aged man who





Above — "Buffalo" Single Suction Full Ball Bearing Pumps, stainless steel construction, handling sodium chlorate.

CORROSION— CONTAMINATION CONTROLLED WITH "BUFFALO" PUMPS

At left — "Buffalo" Single Suction Pumps of stainless steel construction handling hydrogen peroxide bleach.

Using a wide range of materials of construction, "Buffalo" offers a line of pumps capable of handling your toughest liquid moving job. You can order a "Buffalo" pump made of Hastelloy B or C, nickel, bronze, lead, stainless, in fact just about any material that can be cast and machined.

Properly applied, these pumps can cut your liquid moving costs, reduce down-time due to pump failure and improve quality control where contamination may be a factor.

For your tough liquid moving jobs, phone or write your "Buffalo" Engineering Representative or write direct. Tell us the liquid you want to pump and we will be pleased to suggest the best material of construction for the job.

"Buffalo" PUMPS

BUFFALO PUMPS DIVISION OF BUFFALO FORGE CO.

175 Mortimer Street Buffalo, N.Y.

Canada Pumps Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

THESE ADVANTAGES MAKE "BLH" YOUR BEST BUY FOR

HEAVY-DUTY AIR HANDLING

- **High efficiency over a broad range of operation** — ideal for supplying ventilation and air conditioning systems.
- **Stable performance** over the entire range of operation — dependable delivery.
- **Handles pressures up to and including Class IV applications.**
- **Capacities up to 500,000 cfm** and over — in closely graduated sizes to permit exact selection for the job.

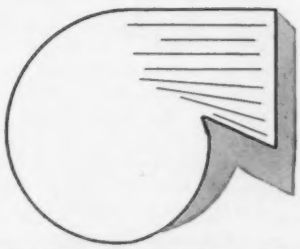
"Q" Factor* Features Available Only in Buffalo Designs

EFFICIENCY AT INLET

Cross-section of inlet, showing smooth half-circle passage into wheel formed by curved inlet bell and mating wheel flange. There are no flat spots to cause turbulence.

EFFICIENCY IN THE WHEEL

Showing deep, backward curve of blades in "BLH" wheel for smooth, quiet handling of air spun into the wheel in the direction of rotation. No waste turbulence.



EFFICIENCY THRU THE HOUSING

Not only is the "BLH" housing streamlined throughout, but its unique fared outlet delivers air to discharge duct with easy, gradual enlargement for best distribution and static conversion.

Write for new Bulletin F-201 for full details.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

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VENTILATING • AIR CLEANING • AIR TEMPERING • INDUCED DRAFT • EXHAUSTING
FORCED DRAFT • COOLING • HEATING • PRESSURE BLOWING

HOW DU PONT PUTS YOU DOLLARS AHEAD IN MAINTENANCE PAINTING

Ben Warwick is a paint expert who specializes in the solution of maintenance problems for the textile industry. As a member of Du Pont's Technical Service Group, he has but one function: to help you cut the cost of maintaining your substantial investment in plant and equipment.

"To insure maximum returns for every dollar spent on paints and painting," he reports, "the only true measure of value is cost-per-square-foot-per-year. Take it from me, an additional paint dollar spent initially can save ten later on. When you specify Du Pont finishes, however, you're getting *more* than top-quality paints. You're getting sound paint practice, backed up by proven field performance.

"A case in point is our new Textile Floor Finish, a single package oil-free urethane clear for all interior wood and concrete floors. With this new finish, you can apply the first coat on an off-day morning, the second that afternoon and let full traffic back on it at midnight! In actual on-the-job tests, this tough coating has delivered up to *3 times* the durability of ordinary first-grade floor seals.

"Naturally, our recommendations don't stop with selection of the proper finish. To effect the kind of savings that translate maintenance dollars into *profit* dollars, the right paint system is just as important. We work closely with your maintenance men, drawing on our own experience to provide expert guidance all along the line. The result: paint maintenance tailored to your particular needs, *at lowest cost per square foot per year.*"

For more information on Du Pont's full line of quality finishes for every maintenance need, contact the Du Pont district sales office in *your* area. Or write: E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Dept. TI-66, Wilmington 98, Del.

* * *

Benjiman G. Warwick has been with Du Pont's Finishes Division more than a quarter century. For the past 16 years he's been busy helping textile mills in southern Virginia and the Carolinas solve their maintenance painting problems. Last year, he personally supervised the initial application of Du Pont's new Textile Floor Finish in 30 plants in that area. Ben is an active member of the Southern Textile Association.

DU PONT PAINTS

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

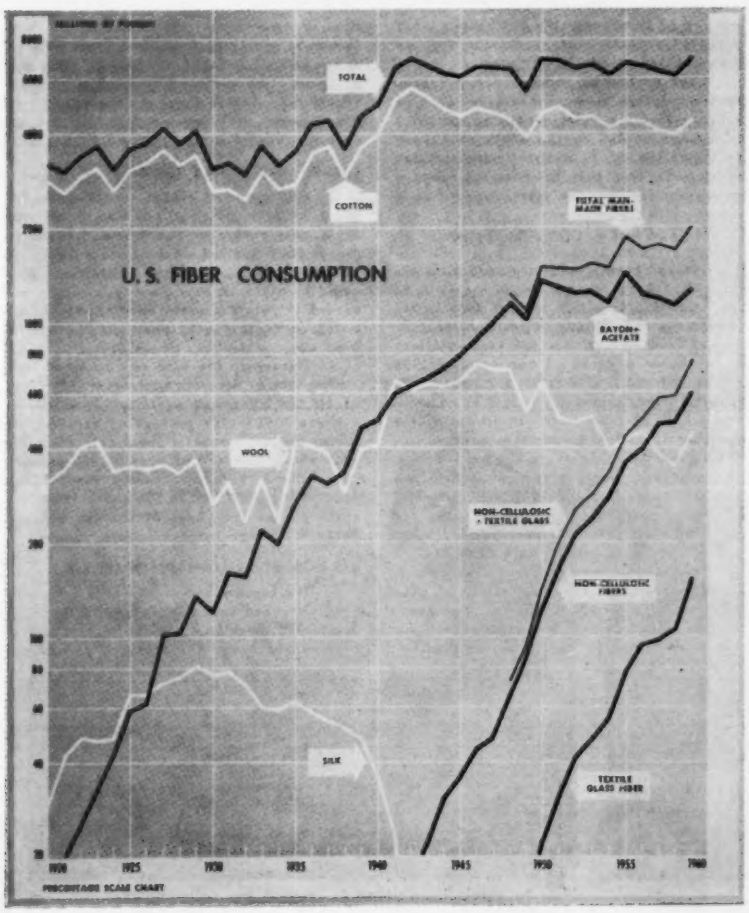
was a loom cleaner in our weave room. His slogan was "Don't take a chance, you may not have one." This slogan was used over and over. We had it printed on a windshield scraper which we were giving away as a gift one time.

The results of the slogan contest are put on our bulletin board, and we have a ceremony at which time the actual cash awards are presented to the winners.

Thermometers at Mill Gates. At each of the entrances and exits of the mill, we have large thermometers painted with red marks showing the present number of safe man-hours we have accumulated for the mill. These are changed each week. Once or twice these thermometers have been changed in error, and employees quickly call the error to our attention, especially if the bulletin board figure is considerably higher than the thermometer showing. Once again, safety as an attitude is in general evidenced by the quick response of our employees to purposely made errors.

1959 fiber consumption by mills up 14% over '58

■ AN ANALYSIS of fiber consumption by U. S. mills shows that in 1959 a total of 6,802,100,000 pounds of textile fibers were consumed, the Textile Economics Bureau reports. This figure was 14 per cent above 1958 when 5,985,800,000 pounds were consumed.



Mill usage of cotton came to 4,354,000,000 pounds, an increase of 10 per cent compared to the year before. Cotton, in accounting for 64 per cent of total fibers consumed, declined in relative importance to the lowest point in history, the report stated.

Man-made fiber consumption last year amounted to 1,996,700,000 pounds, a figure 18 per cent above the previous year and the highest annual total in history. It exceeded the previous record of 1,851,400,000 pounds established in 1955 and represented 29.4 per cent of fibers consumed, also its largest share on record, the Bureau pointed out.

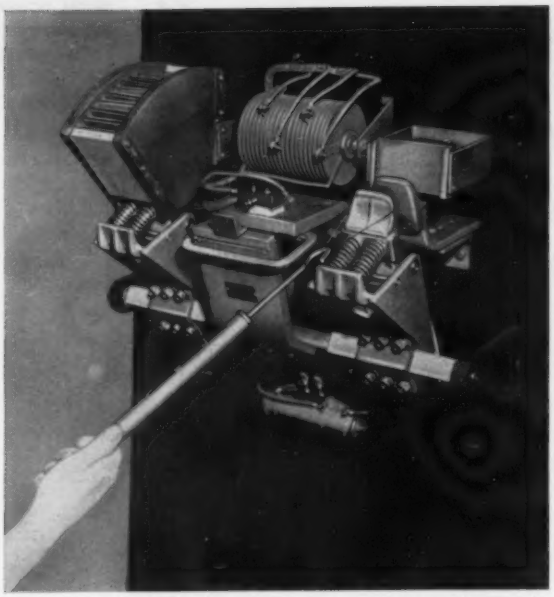
Wool consumption in 1959 amounted to 445,000,000 pounds, up 28 per cent from 1958; however the latest annual total was slightly below the ten-year average of 456,000,000 pounds and substantially lower than the 1940-1949 average of 624,000,000 pounds.

Per Capita Fiber Consumption. U. S. civilian consumption of textile fibers was shown to be 35.6 lb per person in 1959, compared with 31.2 lb in 1958. Last year's figure is the highest since 1955.

The 35.6 lb per person total for 1959 consisted of 21.8 lb of cotton, 10.7 lb of man-made fibers, and 3.1 lb of wool.

What mill electrical equipment maintenance personnel can do to

get the most from electrical controls



Proper method of checking initial spring tension with a scale.

by H. A. Wright
Supervisory Engineer
Allis-Chalmers Mfg. Co.

Exclusive

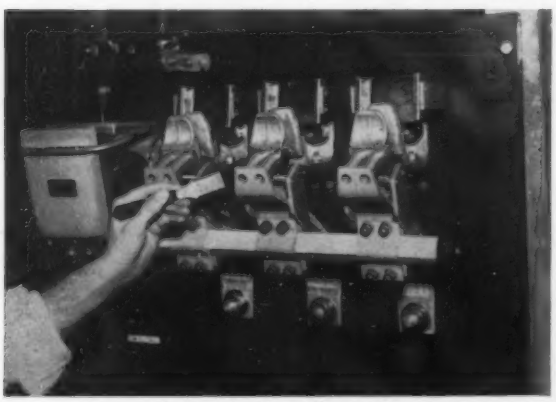
MOST electrical control devices, whether they are motor starters, switches, or integral controls, will give trouble-free service provided they are properly applied, have an adequate electrical system, and are correctly maintained.

Since most control devices have moving parts, failure to recognize and correct early trouble symptoms can lead to a chain reaction which could result in disproportionate maintenance costs or in complete replacement.

Only skilled personnel familiar with electrical equipment and the hazards involved should be permitted to service control units. All safety precautions should be observed, not only on the electrical equipment but on the driven machines as well. A periodic inspection schedule and precautionary maintenance program will result in savings in replacement parts and down time of machines.

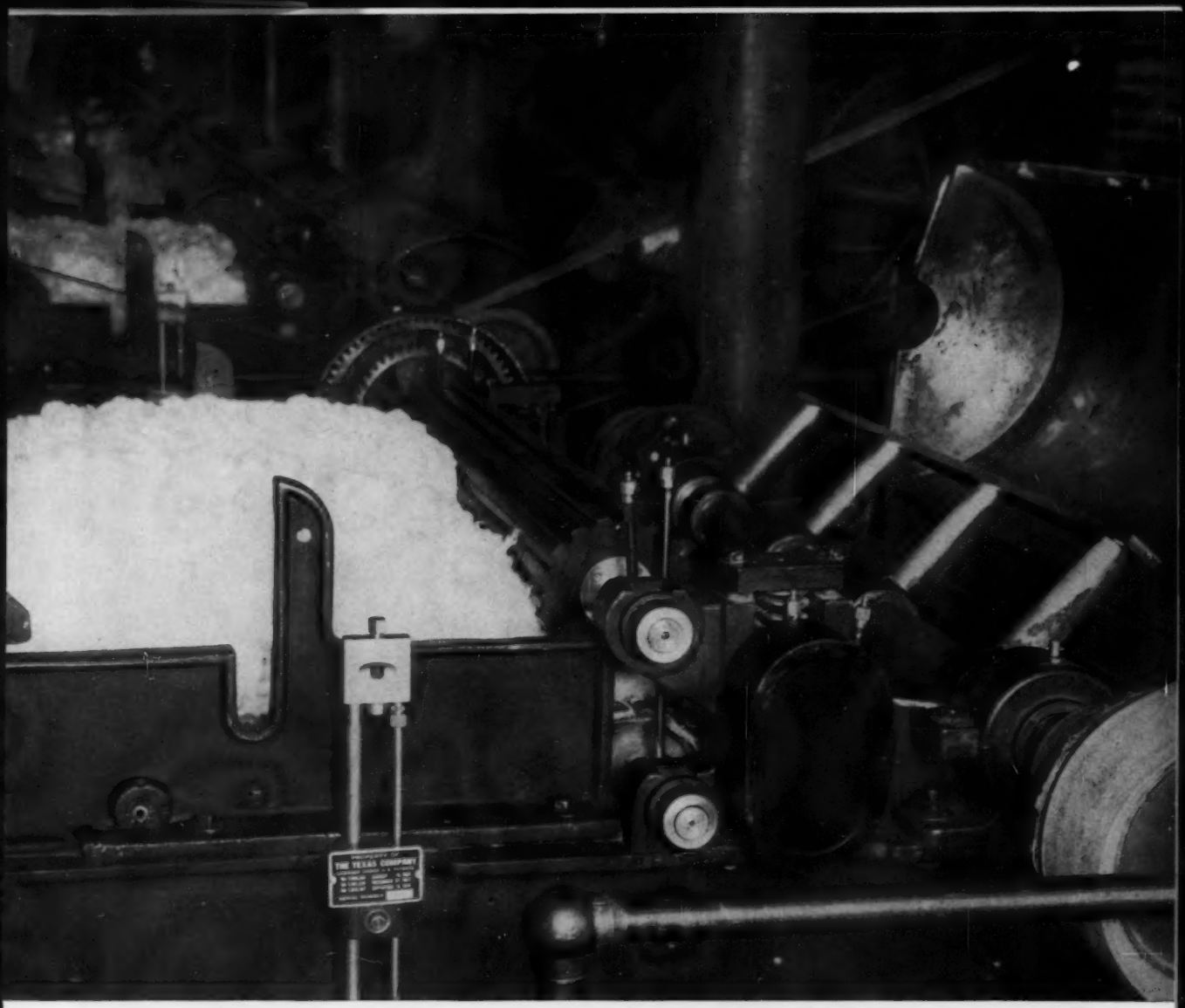
Dust, dirt, and grease should be removed periodically from the controller. Dust can cause mechanical failure and it may form a path between points of different potential, resulting in a short circuit. Dry dust can be blown off; sticky dust and grease are best removed with commercial solvent. Care should be taken when using solvents so the coils do not become soaked. Special attention must also be paid to rust and corrosion, particularly on thermal overload relays.

A plant which used considerable lamp black in its process reported difficulties with a starter having compensated thermal overload relays which apparently were fail-



Remove dry dust with a brush.

How to check line voltage to prevent low voltage during starting.



IF YOU WANT TO BE CONVINCED ABOUT THE EFFECTIVENESS OF COTTON CONDITIONING COMPOUNDS...

Here are the proven benefits of Texspray

Yarn is smoother. Texaco Texspray Compound increases fiber flexibility by replacing natural oils; so fibers draft more easily and uniformly, with fewer ends down.

Staple is longer. Texspray conditioning produces a larger percentage of long fibers . . . preserves them against breakage in later manufacture.

Static electricity is sharply reduced. And, in addition, Texspray practically eliminates fly and dust—often by more than 75%!

Finishing is unaffected. Texspray is completely removed in the preparatory wash. Grey goods can be dyed or printed without altering color values.

Let a Texaco Lubrication Engineer show you where Texspray fits best into your operation. He will be glad to analyze your requirements, make complete recommendations. Just call the nearest of the more than 2300 Texaco Distributing Plants, or write Texaco Inc., 135 East 42nd Street, New York 17, New York.

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Throughout the United States

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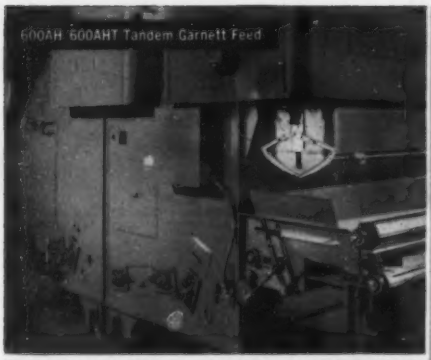
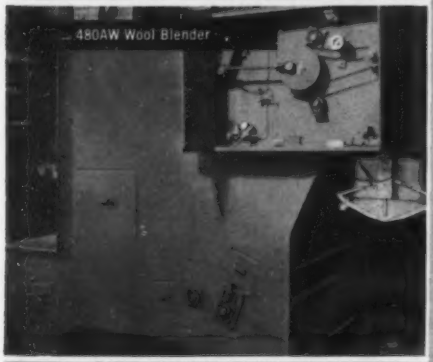
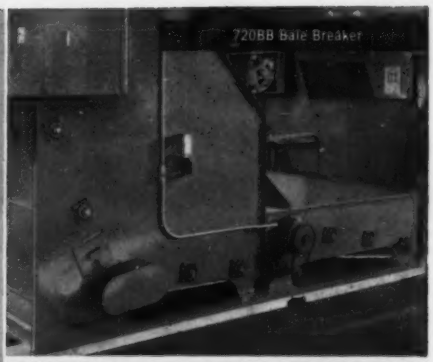




Fafnir Plya-Seal Ball Bearings and Ball Bearing Units are used extensively in the machines shown here made by James Hunter, Inc. of Mauldin, S. C., makers of Hunter Fiber Meter Automatic Blending Systems.



In Fafnir Plya-Seal Ball Bearings, tough, rubber-impregnated fabric seals ride in constant, firm contact with ground inner rings . . . provide "best protection yet" against contaminants, loss of lubricant.

Upkeep comes easy with Hunter machines equipped with Fafnir Plya-Seal Ball Bearings!

Lint is at its worst in bale breaking and fiber blending. Yet Fafnir Plya-Seal Ball Bearings "run clean" in Hunter machines. Contaminants can't get in; grease can't get out. Many Fafnir ball bearing units used by Hunter need no attention at all. They are factory prelubricated and permanently sealed.

Bearing installation comes easy, too. Self-aligning wide inner ring bearings in Fafnir power transmission units make for less critical shaft mounting. And a simple quarter turn of Fafnir-originated self-locking collars secures bearings to shafts with positive binding action. No shaft shoulders, adapters, lock nuts or other mounting accessories needed.

For nearly 40 years, textile equipment makers have turned to Fafnir for help with bearings. Put this experience to work for you! Write for full information. The Fafnir Bearing Company, New Britain, Connecticut.

FAFNIR
BALL BEARINGS

ing to drop out under overload. An investigation revealed that the relays were opening under overload but not opening the coil circuit. So much carbon dust collected on the overload relay contacts that the coil circuit was maintained through the carbon dust. As a consequence, the starter magnet held in even though the overload relays had operated. This starter should have been in a dust-tight enclosure or the carbon dust blown from it frequently to forestall failure.

Another plant was faced with a severe corrosion problem. All operating parts of the starters installed there were carefully maintained but the overload relays were so thoroughly corroded that they failed to trip at the time of overload. The overload relays had actually grown together so there were no longer any moving parts.

MOVING MECHANICAL parts should be free from excess friction. They should be tried by hand to locate any loose pins, bolts, etc. Wearing parts should also be checked for excessive wear.

Bearings on electrical control equipment are designed to operate without lubrication. If oiled or greased, dirt will accumulate and cause sluggish action and possible failure.

Overheated parts are always a sign of trouble. Since various parts operate at different temperatures, it may be difficult to locate this trouble. For example, coils, blowout coils, and other parts of the contactor may operate at a temperature which would boil water, hence these parts cannot be touched. Any evidence of baking or smoking, however, should be cause of immediate attention.

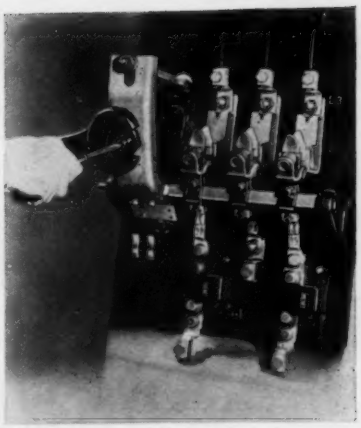
Loose connections, always a source of trouble, may develop at any time. Therefore, control connections should be checked periodically along with the main line connections.

The best way to check for grounds which may develop is to megger the cables and conduits periodically. This is especially necessary if water can collect in the conduit.

CONTACTORS need the most care. Their bearings should be checked for free operation but not lubricated. Deposits on contacts should be removed with either sand paper or a fine file. Never use emery paper because it imbeds in the contact face and continues to wear the contacts. In filing, care should be taken to maintain the original shape of the contact, but don't overdo.

Copper oxide forming on contact tips can cause failure and must be removed. A starter for a synchronous motor driving a pump operated continuously without a shutdown for long periods of time. Then the motor would lose its field for no apparent reason. Upon investigation, it was found that sufficient copper oxide was forming on the field contactor tips to insulate them.

This was difficult to explain, because the contactor was rated 50 amperes and the field current was only 16 amperes. Since the contactor remained closed for long



Proper way to adjust magnet gap on a-c contactor when main contacts just touch.

PREVENTIVE MAINTENANCE CHECK LIST

Date ..... Tool No. ..... Voltage .....

Serial No. ..... H p ..... Location .....

Pull disconnect switch before working on control

Check	Item	Operation
☐	**Dust**	Clean.
☐	**Rust and Corrosion**	Clean—Report if excessive.
☐	**Connections**	Tighten electrical connections, look for discoloration of any copper current carrying parts.
☐	**Nuts and Bolts**	Check mechanical connections.
☐	**Fuse clips**	Check for spring clip pressure.
☐	**Fuse ferrules**	If copper, polish; loose ferrules and proper size fuses.
☐	**Contact tips**	Look for copper oxide scale, dress only if necessary. Check roll and wipe.
☐	**Contact pressure**	Check contact pressure, is pressure same on all tips.
☐	**Flexible leads**	Look for frayed and broken strands, flexing over entire length.
☐	**Bearings**	Do not oil; are they free moving.
☐	**Coils**	Check for any signs of overheating or mechanical injury.
☐	**Magnets**	Clean faces, check shading coil, misalignment, mechanical binding, striking coil.
☐	**Overload relays**	Trip by hand, mechanically free, clean, check heater coil and tighten all connections.
☐	**Arc shields**	Check for breaks and burning.
☐	**Blowout coils**	Check for overheating and tighten.
☐	**Dash pots**	Free; clean, if oil type, check oil level.
☐	**Push Button or selector switch**	Clean, check contacts.
☐	**Relays**	Clean and check for mechanical binding and sticking. Check contacts.
☐	**Resistors**	Check for signs of overheating; if sliders tighten.
☐	**Oil Immersed Devices**	Drain small quantity from bottom to remove sludge; if much sludge, drain oil and clean. Check level and add; replace oil if black and dirty; check contactor and wipe off carbon.
☐	**Drum Controllers**	Tighten and check for contact wear and overheating; put small amount of vaseline on sliding surfaces.
☐	**Pilot Devices**	Clean and check contacts.
	START THE MOTOR OBSERVING ALL SAFETY PRECAUTIONS FOR DRIVEN MACHINES.	
☐	**Check starting sequence**	Does the control function properly.
☐	**Contactors**	Flash on closing, if so, check for adjustment to eliminate contact bounce.
☐	**Noise**	Check shading coils, magnet surface, sealing, mechanical binding, loose rivets.
☐	**Pilot Devices, Pressure Switches, Temp. Switches**	Check bottom and top limits of operation. Is there any fluttering of contacts denoted by pumping of main contacts.

List any parts which will have to be replaced in the near future.

get to know the facts about

Creslan®

ACRYLIC FIBER

The Most Modern of the Acrylic Fibers

Creslan acrylic fiber has already made an auspicious entry into spinning mills and weaving plants. You will be interested in knowing more about this versatile fiber. Its qualifications are specific—and numerous. For a full description of these qualities and properties, write for your copy of our TECHNICAL DATA BULLETIN.

Creslan acrylic fiber is a product of American Cyanamid Company, Fibers Division, 111 West 40th Street, New York 18, New York.

CYANAMID

periods of time, there was no cleaning action to knock off the copper oxide nor was any maintenance possible between turn arounds. As a result, a small amount of copper oxide formed which caused more heating, more copper oxide, and so on until finally failure was experienced. The solution was to replace the copper contact tips with silver tips.

Silver contacts should never be filed unless they become severely roughened. Silver oxide is a good conductor and does not need to be removed. When contacts are deeply pitted, burned, or worn thin, they should be replaced in sets with new ones. Screws holding the contacts in place should be kept tight at all times.

Springs maintain the proper contact pressure. If contacts are permitted to wear too thin, spring pressure decreases and overheating results. This generally causes the spring to lose its temper, further decreasing the contact pressure.

Spring tension should be checked with a scale in accordance with the manufacturer's recommendation. If a scale is not available, a comparison test could be made between the installed spring and a new one of the same design. Where neither of these tests is possible, springs may be checked by compressing with the fingers to determine whether one is weaker than the others. A good rule to follow is to replace contact springs when replacing contacts.

New methods of impregnation have greatly reduced coil burnouts. However, in the event of a-c coil failure, the contactor should be checked for mechanical binding or blocking. For example, an a-c contactor coil may have a 47-ampere inrush value with the magnet open, and 1.7 amperes with the magnet closed in the sealed position. If the magnet is accidentally blocked open, or the voltage is so low that the magnet cannot seal against the contact springs, the current will be high, causing a burn-out.

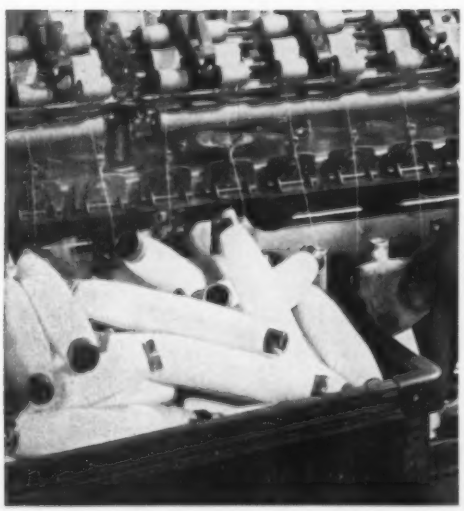
CONNECTORS made of fine stranded wire are subject to repeated flexing. Eventually some of the strands may break, increasing the current on the remaining strands. In such instances the lead

CONTROL TROUBLE-SHOOTING CHART

SYMPTOM	POSSIBLE CAUSE	CURE
MANUALLY OPERATED CONTROLLERS		
Excessive Contact Burning	Low contact pressure, contacts not properly aligned	Adjustment by inspection. On drum controllers adjust star wheel lever spring to center the finger so it strikes the contact squarely.
Burning Out Resistors	Starting sequence stopped at mid-point	Instruct operator.
Failure to Pick Up	Low voltage on coil	Check system.
Failure to Hold In	Coil burned out, or wrong coil	Replace.
	Excessive magnet gap	Check gap.
Failure to Drop Out	Mechanical binding	Clean and adjust.
	Contact welded	See Contacts.
	Voltage not removed	Check circuit.
THERMAL OVERLOAD RELAYS		
Failure to Trip	Wrong size heater	Check instruction sheets.
	Mechanical binding	Clean and adjust.
	Relay damaged by short circuits	Replace relay.
	Motor and relay in different ambient temperatures	Install motor and control in uniform temperature.
Trips at too Low Current	Wrong heater	Check instruction sheets.
	Heater assembled incorrectly	Check instructions.
	Heater in high ambient	Install relay and controller near motor or in cooler place.
	Wrong calibration	Refer to factory.
Trips on Starting	Starting cycle of motor too long	Refer to factory.
Failure to Reset	Broken mechanism	Replace relay or broken part.
Burning of Relay Contacts	Short circuit	Check wiring of push-button in the circuit.
	High coil current	Check holding coil current.
	Vibration	Remount control.
	Dirt and corrosion	Clean and adjust.
	Misapplication	Use interposing relay if handling too high coil currents for relay contacts.
CONTACTS		
Short Contact Life	Interrupting too high a current	Use special tips or next larger size contactor
	Using oil immersed device when air should be used (Note: Contacts burn many times faster in oil than in air.)	Use air break device if oil is not necessary or if oil is imperative, try heavier duty oil-immersed device.
	"Bounce" on opening or closing	Readjust contactor for "bounce."
	Abrasive dust	Dust tight enclosure
	Low contact pressure	New contacts and/or springs.
	Frequent jogging	Larger size contactor.
Contact Chatter or Pumping	Poor contact in control circuit	Check connections in control circuit.
	Fluttering control relay, such as pressure or temperature switch	Repair pilot device.
	Broken shading coil	Replace.
	Bad interlock	Increase wipe and pressure on sealing interlock.
Overheating	Copper oxide	Clean lightly with file.
	Heavy load for more than eight hours continuous operation	Use silver alloy tips.
	Overloaded	Reduce load or use larger control.
	Weak contact pressure	Clean and adjust. Replace contact spring and contact if wear allowance is used up.
	Poor connection	Tighten.
Weak Pressure	Worn tips	New tips.
	Poor adjustment	Readjust gap and wear allowance.
	Low voltage, magnet not sealing	Correct voltage, use lower voltage coil.
Welding of Contacts	Poor spring pressure	New springs.
	Abnormal currents	Less current, larger device or non-welding contact tips.
	Repeated jogging or inching	Controllers must be derated for jogging duty due to severe strain.
		Use next larger device or tell operator to jog more slowly. Special alloy tips may also help.
	Low Voltage—Contact may drop part way open on slow dips of voltage	Raise voltage.
	Bouncing of contactor	Eliminate overvoltage and/or mechanical difficulties.
COILS		
Open Circuit	Contacts not sealing	Eliminate mechanical binding of contactor.
	Failure to insert protective resistor on dc	Interlock not making contact—Repair interlock.
	Mechanical injury	Replace coil; use more care.
	Very rapid jogging	Check application.
	Short time rated coil energized too long	Check timing sequence.
	Overvoltage and/or high ambient	Check circuit and application.
Coil Failure	Moisture or corrosive atmosphere	Special coils.
SLIDING CONTACTS Used on rheostats, knife and drum switches		
Overheating	Overcurrent, weak contact pressure	Dress copper contacts or use special alloy contacts. Lubricate contacts periodically as recommended.
Excessive Burning	Rapid lever operation	Operate more slowly to eliminate starting across the line which causes burning of contact surfaces and flashover.
Irregular Surfaces	Lack of maintenance	Smooth over contact surface and lubricate. Do not use emery cloth.
Abrasion	Lack of lubrication	Apply light coat of vaseline.
MAGNETS		
Noisy	Low Voltage	Raise voltage or use lower voltage coil.
	Broken shading coil	New shading coil or if face of magnet is worn down, install new magnet frame.
	Dirt	Clean sealing surface of the magnet and bearing points; lubricate with good grade of white machine oil.
	Misalignment	Realign.
Fail to Open	Grease on magnet surface	Clean.
	Misalignment	Realign.
	Contacts welded	(See contact welding).

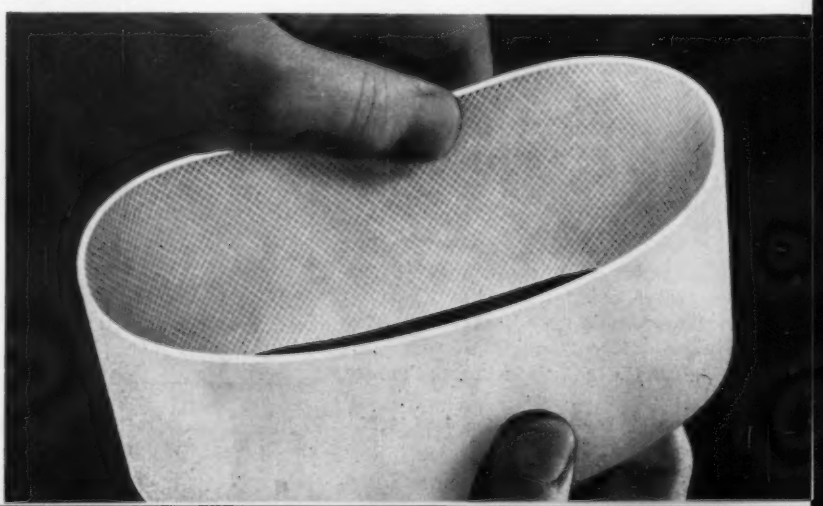
RIGHT FROM THE START UP, you get uniform yarn. No sets, no depressions, no time wasted, no need to turn over a couple of times to iron out. Dayco Aprons and Cots make both speed and quality possible. After week-end shutdowns, Dayco Aprons and Cots immediately deliver top quality yarn with no long line of ends down. Fibers just don't stick to Dayco Aprons and Cots, natural fibers with gummy oils don't affect them, temperature and humidity can't bother them.

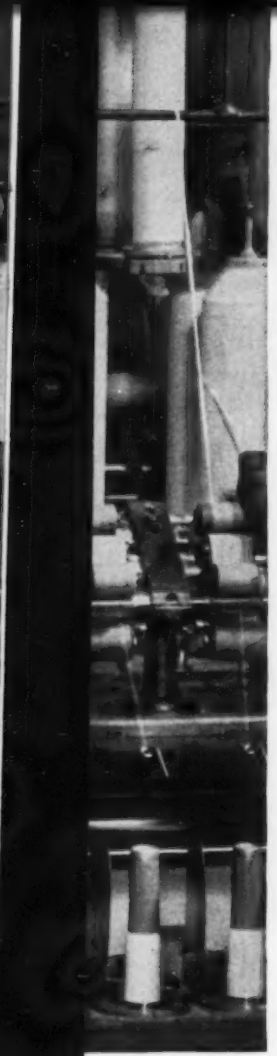
GET 12% BETTER YARN . .

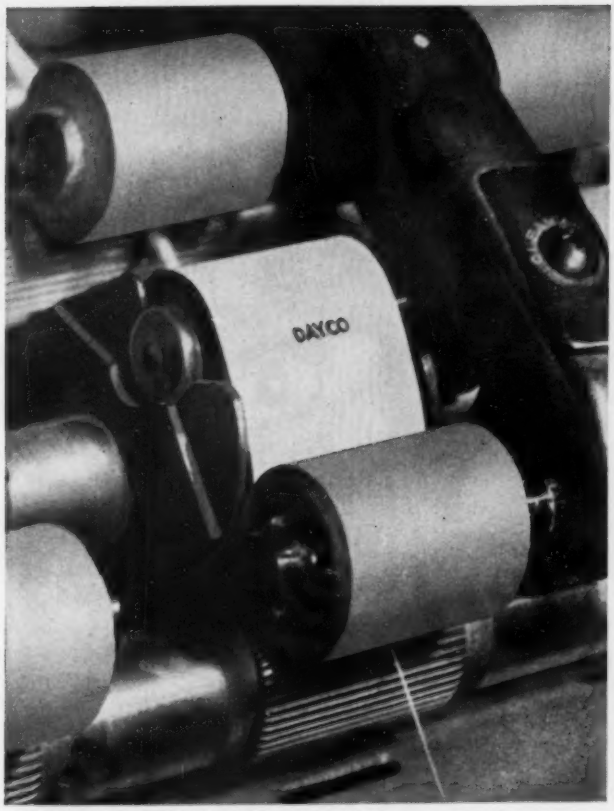


"UPS OUTPUT of strong uniform finer quality yarn" reports the overseer after a day with Dayco Aprons and Cots. Dayco's got just the right surface friction to leave the larger fibers in the yarn, not on the clearer board. You can count on Dayco Aprons and Cots when you want to count important extra yardage . . . better yarn . . . more full bobbins . . . at the end of the shift.

DAYCO'S EXCLUSIVE EMBOSSED DESIGN keeps the shaft clean, cuts your apron drag 50%, prevents tucking and eliminates waste-collecting. No sign of apron chatter, either.







DAYCO COTS STAY GOOD AS NEW year after year from buffing to buffing . . . keep all their fine-quality drafting characteristics. Dayco's long-run, top performance makes them the choice in leading mills.

. . . TROUBLE-FREE PERFORMANCE

with Dayco Aprons and Cots, the pair for profits

More yarn . . . better quality yarn . . . more consistency. These are the benefits that explain why Dayco Aprons and Cots are the choice of superintendents and overseers in leading mills everywhere. They are precision-made to exacting tolerances for modern super-drafting, and high yarn uniformity; precision-formulated for longer, trouble-free life. They outlast all others in oxygen-intensified checking tests. Dayco has proven thousands of times in the laboratory and in the mill there is no match for Dayco Aprons and Cots. Throughout their lifetime, they start better . . . stay better longer.

Ask your Dayco Representative to set up a time trial installation with Dayco Aprons and Cots . . . better results guaranteed. Phone or write the Dayton Rubber Co., Textile Division, 401 South Carolina National Bank Bldg., Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving.

OVERSEAS PLANT: THE DAYTON RUBBER COMPANY, LTD., DUNDEE, SCOTLAND

Report of APRON CHECKING COMPARISON TEST MADE IN OZONE CHAMBER

DAYTON RUBBER researchers found Dayco Aprons superior in a comparison test. All apron brands were exposed in an intensified oxygen chamber developing O_3 (ozone).

This test, simulating actual plant conditions in the O_3 chamber converted months to minutes and showed even the leading brands developing the spiderweb checking many "months" sooner than Dayton.

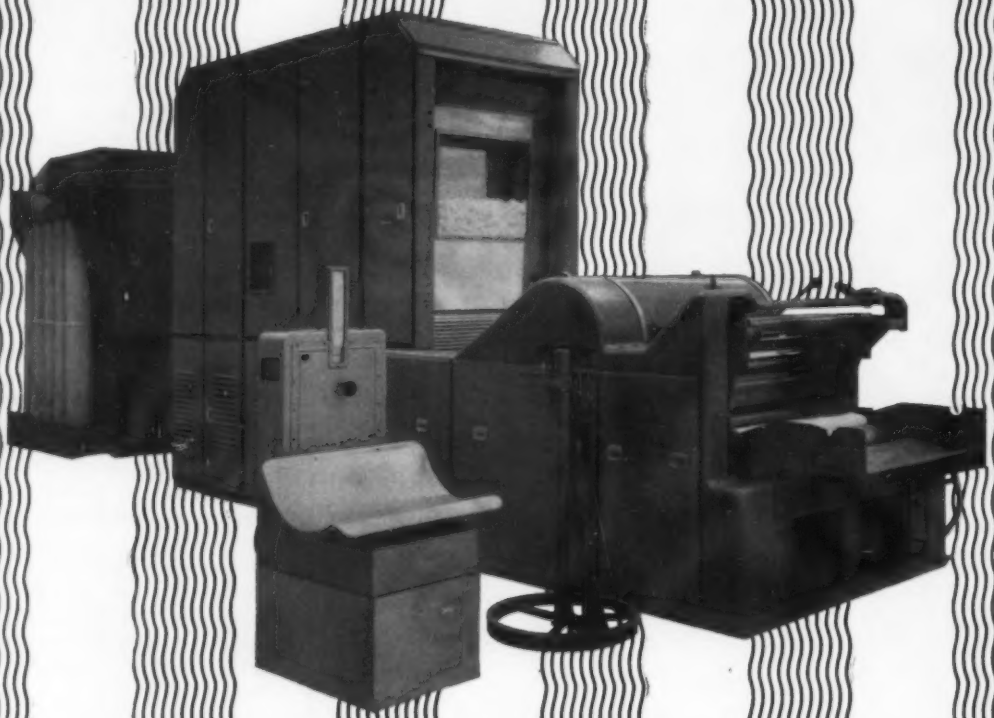
MECHANICAL VS. CHEMICAL— A NEW VIEW ON CHECKING

Air conditions in textile plants have changed greatly in recent years. We find greater turbulence of air over the cleaners, a marked increase in number of motors, plus motors of larger size, air conditioning and many other air factors. Yet Dayton laboratory research and field investigation find the checking problem should be studied in terms of mechanical, rather than chemical wear-and-tear. The new sharper angle of the apron and the machines with the new nose bars, the greater demands on machines all suggest research into synthetic compounds instead of the air conditions in the plants. Research into "rat tailing," frictional heat build-up—powerful enough to strip gears—and apron chatter promise sounder answers to apron problems than the negligible amounts of ozone found in the air.

DAYTON ATTACKS BOTH CHECKING CAUSES

Dayton researchers have as a result of this problem reformulated compounds not only to meet *chemical* conditions but also to cope with the newer *mechanical* conditions. Dayton researchers developed formulations for *lower* coefficients of frictions around the new narrow-nose tensors, yet more exacting coefficients on the apron surface for smoother more uniform yarn.

FOR EVEN LAPS



TRÜTZSCHLER

CONDENSER KSL / HOPPER FEEDER KS / PICKER AND AUTOMATIC LAP MACHINE SMVA

Complete Opening Equipment for Cotton, Synthetics and Waste
Specialists for 60 Years in Cotton Opening Equipment

Trützschler & Co., Textilmaschinenfabrik, Rheydt-Odenkirchen, Western-Germany
Ernest L. Frankl Associates, 515 Madison Avenue, New York 22, N.Y.

should be replaced. New leads should be formed by hand so they will take the flexing over the entire length rather than at one point.

Arc shields should be checked to make sure they are in place and are not obstructed with dirt. If severely coated with carbon or copper deposits, they should be cleaned.

Some controllers have dashpots which may be air or liquid filled. If they are oil-filled dashpots, only special dashpot oil should be used. The dashpots should be checked to make sure they are not sticking or binding.

The oil on high-voltage, oil-immersed contactors and circuit breakers should be maintained at the recommended level, and should be periodically inspected for water, sludging, and excess carbon.

THERE IS more to maintenance than just keeping the equipment clean and adjusted. Frequently, because of a malfunction, it may be necessary to shoot trouble. The end result may be obvious but not always the cause, therefore don't jump to conclusions. There are times when pilot devices such as pressure, temperature, or float switches are the real culprit rather than the control itself.

Some of the most frequent difficulties common to most electrical control devices are pin-pointed in the accompanying trouble-shooting chart. Also shown is a preventive maintenance check list to serve as a guide in setting up a thorough maintenance program.

Foreign machinery *(from page 67)*

and next winter, foreign steel will have a still greater advantage in the American market.

It seems that European manufacturers are beginning to rid themselves of the strangling practices of their labor unions just as we are finding these to be getting worse. Featherbedding has been the curse of the textile industry in England and New England, and it has reportedly been a serious problem in all manufacturing in England and Europe. Some foreign manufacturers here and there seem to have escaped the union toils and have built up marvelously efficient businesses. European sewing machines and typewriters, for example, are sold in tremendous quantities in this country, and seem to be fully the equal of anything we can manufacture.

A GREAT MANY American concerns which used to do a flourishing foreign business, now crippled or killed off by too high prices, have built foreign factories. One American concern with a factory in Germany can sell this machinery in Canada for about 25 per cent less than it can sell machinery to the same purchaser from its American factory. This sort of thing may be all right for the manufacturer, and it is certainly nice for Germany, but it destroys American jobs. Conceivably, in time, this concern might liquidate its American factories completely and manufacture everything in Germany or some other European country where wages are about one-third of what they are in the United States.

This sort of thing would certainly not be good for our country, but it is something that could happen if our labor unions keep pushing wages ever higher and higher. If any large-scale movement of this sort got under way there would certainly be a widespread clamor for more and more tariff protection, but since the trend in international affairs seems to be away from protective tariffs, it would be hard to buck this trend.

Europe, right now, is working toward the time when there may be no international tariffs on the Continent, and if that time comes, giant industrial combinations will spring up all over Europe to fully equal anything we have for size and efficiency. There are very big producers of certain things in Europe now, and a freer European market would tremendously increase the size and potency of many of these already large concerns.

The Industrial Revolution began in England, but we took it over and developed it far more rapidly than any other country. Maybe the Europeans are now ready to take it back from us, and with the wholehearted support of our labor racketeers they probably can do it.

Water softener *(from page 107)*

However, if permanent damage has been done to the resin, then replacement of the material will be necessary. When replacements are necessary, the selection of one of the high capacity resins to replace greensand or the siliceous type zeolite can often lead to substantial savings in salt requirements.

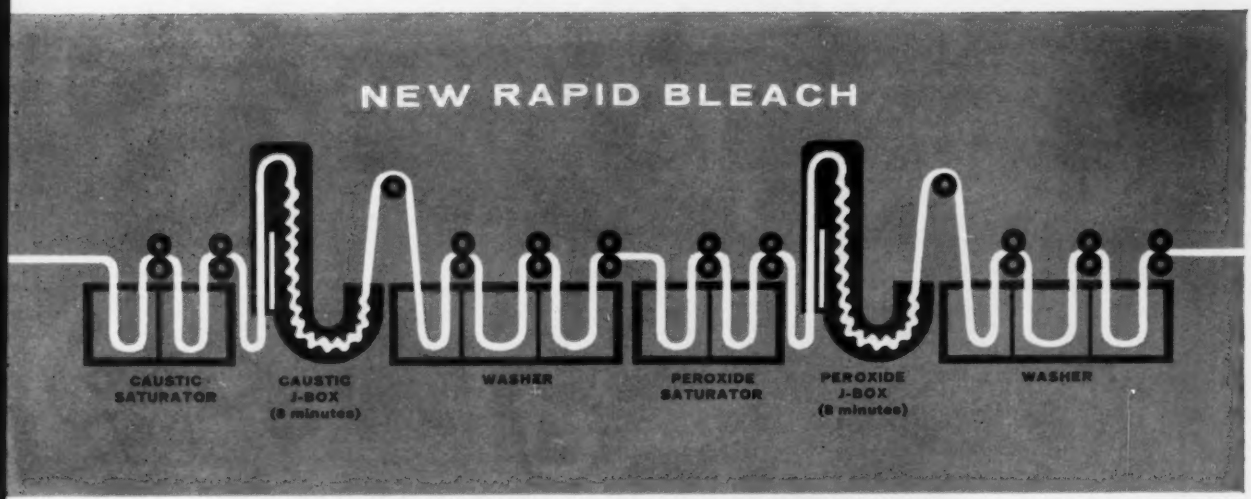
Table I shows the comparision between capacity and salt requirements for various types of exchange materials. It should be noted that greater exchange capacities can be secured with the polystyrene resins at a lower salt consumption than with the greensands. It should further be noted that the polystyrene resins can tolerate a wider variation in pH and temperature. In many cases, the softening rates are higher with these materials and increased capacity can be an added benefit.

The replacement of natural greensand with a polystyrene resin has resulted in as much as a 40% increase in softening rate and as high as a ten-fold increase in softener capacity. The savings in both salt and labor attributed to operation of the softener can result in sufficient savings to pay for the replacement in less than two years.

Du Pont's New Rapid Bleach Process Cuts Bleaching Costs... Improves Dyeing Quality

DU PONT
REG. U. S. PAT. OFF.

ALBONE® hydrogen peroxide **SOLOZONE**® sodium peroxide **PERDOX**® sodium



Diagrammatic sketch of new Du Pont Rapid Bleach Process shows arrangement of major elements: caustic saturator, caustic J-box, washer, peroxide saturator, peroxide J-box and final washer. Operation saves time, cuts operating costs. It can be used for medium-weight cotton fabrics and is especially suitable for hard-to-handle heavyweight fabrics that are susceptible to bruising.

Production-scale operations prove the superiority of the Du Pont Rapid Bleach Process over conventional methods for preparing heavy cotton fabrics for dyeing and finishing . . . at a lower cost.

The new Du Pont Process (shown above) prepares fabrics for finishing with high absorbency and exceptionally good dye receptivity. You obtain high color values and much greater clarity from the dye colors used. And you do it faster and easier.

Du Pont Rapid Bleach is a continuous process . . . specifically designed for medium to heavyweight fabrics. It's unique, simple and fast. Has caustic pre-treatment in the first J-box. The new two-stage process reduces cloth storage time to as little as 8 minutes in each J-box. Makes substantial savings possible over batch methods.

This new method introduces an open-width, continuous process designed for the preparation of sensitive fabrics (such as twills, drills, poplins, etc.) for dyeing. It reduces seconds and rejects due to bruises, rub marks and creases and can be readily adapted to any continuous, or semi-continuous, open-width system.

If you'd like more information on new Rapid Bleach, call your Du Pont Representative. He's a specialist in textile bleaching and will be glad to show you how this new process may profitably fit into your mill.

DU PONT BLEACHING PRODUCTS

assure you of the best bleaching results every time. They help speed bleaching operations more economically. They're thoroughly tested and proved out in successful mill operation. All are readily available from convenient shipping points to assure prompt delivery. Du Pont, Electrochemicals Department, Peroxygen Products Division, Wilmington 98, Delaware.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

borate perhydrate **OXONE®** monopersulfate compound **SODIUM PERBORATE**

Speaking of Wear

Hosiery Buyer: "My customers expect minimum pop-runs from damaged filaments."

Hosiery Manufacturer: "I want to eliminate menders."

You'll both be happy with stockings dyed and finished on the *Turbo Dye Boarder.*

With the Turbo Dye Boarder, handling of hosiery is reduced to a minimum. By combining preboarding, dyeing, postboarding, and drying in one machine, the Turbo Dye Boarder provides a short-cut from the greige goods examiner to the pairer. Mending is substantially reduced.

Pressure dyeing in the Turbo Dye Boarder accomplishes deep penetration of dyeing and finishing materials into the fiber, bringing about rich color values, more life and elasticity, better light and wash fastness, better snag resistance, and longer wear. Production capacity is 140 dozen pairs per shift with one operator. Bulletin on request.

TURBO

TURBO MACHINE COMPANY, LANSDALE, PA.

Licensed Builder for Spain: Argelich, Termes Y C. A. Tarrasa, Spain

KNITTING SECTION

Hosiery makers optimistic

at Florida meeting

Staff report

SEVERAL HUNDRED representatives of the hosiery industry attending the annual convention of the National Association of Hosiery Manufacturers at Bal Harbour, Fla., heard A. C. Layton Newsom, Durene Association of America, attribute weaknesses of the sock and anklet business to the "attitude" of mill men and their salesmen, distributors and their salesmen, retailers and their buyers. In the 60's, we will have another 27 million potential customers added to the population. The opportunity to take advantage of this market rests on six basic conditions contributing to the weaknesses of the business, he said.

They are: (1) a perpetuation of historic price points and the introduction of even lower ones in a period of general inflation; (2) failure to give the customer an opportunity to see something better or something new in every basic category; (3) no highlighting of quality features; (4) concentration on limited assortments and at the lowest price lines; (5) failure to make an effort to increase the number of pairs sold per purchase; (6) indifference of department stores to the sock and anklet business, resulting in small volume and an absence of pace-setting competition. "Attitude" permits these conditions to exist, Mr. Newsome indicated.

In 1959, department stores with a total volume approximately equal to the total business of the chain, catalog, and variety stores, sold only 15.5% of the total sock and anklet volume at retail. At the same time, department stores were selling 37.7% of the total national market for women's and misses' apparel and accessories; 25.5% of men's and boys' apparel and accessories; 24.5% of furniture and furnishings; 27% of all corsets.

The reasons for this poor department store showing in the sock and anklet business follow the pattern for the industry—"attitude." Indifference of management and buyers; merchandise assortments incomplete, unbalanced, lacking in depth; space insufficient and poorly utilized; poor traffic exposure and failure to realize that socks and anklets are impulse items; inadequate fixtures designed more for confusion than for customer shopping; displays lacking essential data on weight, type, price and size; weakness of stock control resulting in out-of-stock condition of best selling types, colors, and sizes; lack of promotion with no suggestion of multiple pricing, little attempt to trade up.

Because of the exploding population figures in the teenage group, there will be an increase of some 10% in children's and girls', 20% in the infants', and only the boys' market remains the same or slightly less.

If we raise the present per cap-

Continued on page 132

The Sock and Anklet Opportunity

	1960 Total Market Million Dollars	Population 1960	Population 1970
Men's/Youths' Age 14 and up	332.9	61.5	72.0
Children's/Girls' Age 3-14	91.5	29.5	32.2
Boys' Age 8-14	37.0	11.3	11.0
Young Women/Teens Age 14-40	34.3	31.4	37.4
Infants' Age 0-3	24.7	10.7	12.8

QUALITY FIRST

is the watchword in this sweater and shirt plant which stays ahead on style and equipment

Staff prepared Exclusive

A MARKET LEADER in styles, Herbert Mills Co., Inc., buys the latest knitting machines and auxiliary equipment needed to do the job and stay ahead. Formed in 1953, the company had three interlock body machines and 12 ribbers operating in the former Marion Cotton Mill building and utilizing about 10-12,000 square feet of floor space. Production amounted to about 300 dozen worsted sweaters a week or about 700 dozen terry shirts, depending on the season.

"Under New Management." The plant was owned and operated by Herbert Levy and Associates for one year. Cary C. Boshamer bought the assets and liabilities of the company in 1953 and now operates it as president. Mr. Levy is vice-president and general manager; L. A. Croft is vice-president and superintendent.

Immediately, the new management started expanding and modernizing the facilities. New buildings went up and new machines and methods appeared. The present modern brick building includes 76,000 square feet of floor space, 43,000 square feet of which were added little more than a year ago.

Any new machinery that fits the firm's product line is automatically ordered as soon as the equipment is available. Management is constantly searching for new ways of efficiency, flexibility, and new styles. A new washer on order is to wash and extract a load weighing 325 pounds.

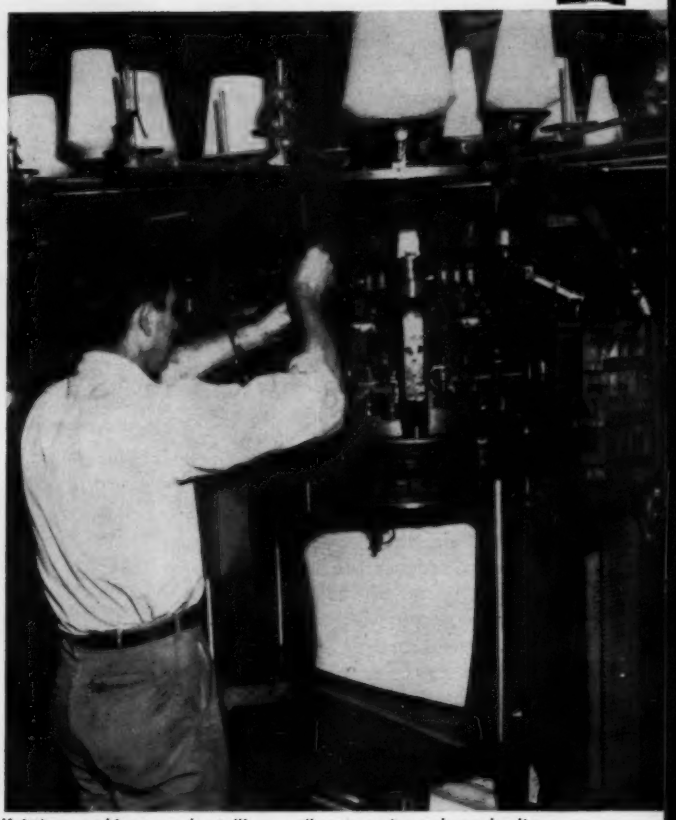
At present 3000 dozen sweaters of all kinds (natural and synthetic fibers) and 1500 dozen placket shirts are produced each week. The company makes high-style goods for brand houses and department stores, and a line of staple goods as well. All styles are designed within the organization under the supervision of Herbert Levy, who keeps in close touch with the market.

The right style, quality, and service to customers has brought an increase in volume of business from each customer, and each year finds new customers on the books, according to President Boshamer. "It pays to make the best and furnish service, as well as good delivery," he says. Proof that this mill is on the right track is shown by the fact that garments styled and made here are the top volume sellers in the largest mail order and chain store corporation in the country.

From Yarn to Customer's Package. Manufacturing operations in this mill include knitting, washing, fulling, cutting, sewing, pressing, labeling, and packaging to customer specifications. Close observation of manufacturing details and service are credited with a majority of the company's success, Mr. Boshamer indicates. Shipments in 1959 were $1,100,000.00 more than in 1958, further proof that the successful formula operates here.

Some of the essentials observed in manufacturing include a close watch on the number of stitches per square inch in each fabric, a factor which is maintained constantly to predetermined standards

While still attached to machine, fabric gets second inspection.



Knitting machines are kept "jam up," get semiannual overhauling.

to assure uniformity in the finished product. All synthetics are washed and set before cutting to assure no shrinkage.

The array of knitting machines includes 26 Jacquard body knitters, 30″ diameter, 10½-13 cut; six 10-cut flat knitters for collars and trim; six 8-cut flat knitters for collars and trim; four 4-cut flat knitters for border and trim; four 18″-22″ body knitters, 10½-cut; 18 circular knitters, 14″-20″ for yard goods; seven 16″ stripers; three interlock, 28″; and about 75

Lester Levy, Herbert Levy, and L. A. Croft confer on new style soon to be produced.

President Cary C. Boshamer keeps his firm abreast of technology, orders any new equipment his product lines can use almost the moment it becomes available.

braid, border, and cuff machines. Also in production are nine 10-cut flat knitters for trim; and six Jacquard 6-cut, 12"-18". Every machine is equipped with stop motions.

Machines are dismantled, cleaned, and overhauled twice a year to assure optimum production and quality. Large stocks of various yarns are kept on hand to fulfill needs as they arise. There is no lint problem of consequence because the yarns are largely long staple.

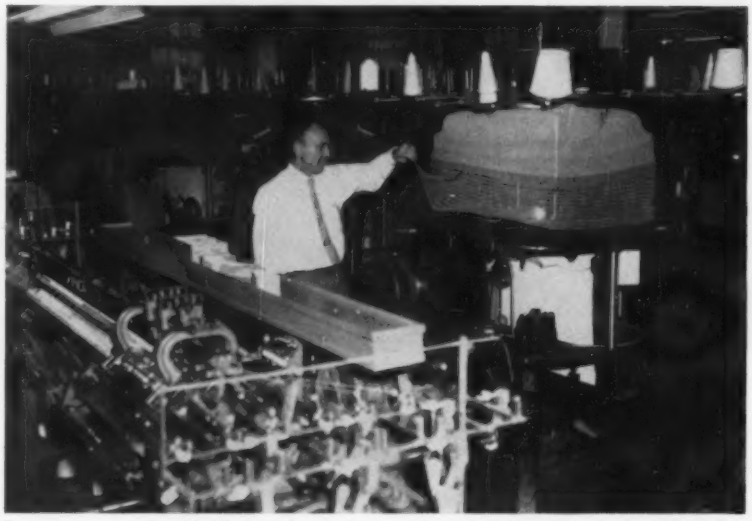
Additional early inspection of knit goods is done on tables placed adjacent to knitting machines. All yarns are waxed, and this provides enough lubricant for needles between machine overhauls. Also, oil cups provide lubrication to essential parts while the machines are in operation.

All goods are kept in canvas baskets to protect them against contamination while being fabricated.

There are 350-400 sewing machines and looping machines in operation. The plant keps 400-450 employees on full time, and this is a credit to good management and operations.

Sales are handled by Herbert Mills Associates, 112 West 34th St., N.Y.C., with Charles Kelly, a member of the firm, in charge.

Knit goods emerge as garments from the complex processes of this 400-machine sewing room.



Protective wraps for all idled machinery keep equipment in condition for immediate use.

Hosiery makers optimistic *(from page 129)*

ita consumption of 5.99 pairs to 7 pairs, or slightly below the 1949 level, the industry will sell $180,000,000 more at retail. If the present average price paid per pair is increased just 10% by moving some customers into higher price lines, the industry can look forward to $250,000,000 more business at retail level.

The 60's offer a tremendous opportunity in socks and anklets to manufacturers, distributors, and retailers, Mr. Newsome concluded.

Another note of optimism was sounded in the annual report of W. F. Williamson, NAHM president. The outlook for the 60's as a whole is altogether good, and we are practically certain to sell a vastly increased volume during the decade ahead as compared with the 50's, and our situation for handling such volume on a profitable basis has also vastly improved, Mr. Williamson indicated.

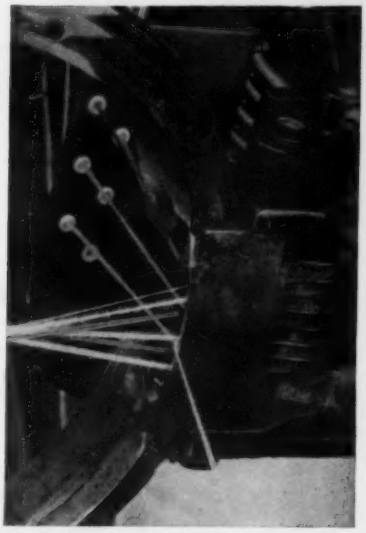
A department store survey of 58 departments revealed that only 18 departments outranked hosiery in terms of dollars; in terms of customers served, hosiery ranked 6th; in terms of minimum space required, hosiery ranked 2nd; in terms of net return per square foot of space, hosiery ranked first. These figures were amplified in a paper by Joseph S. Friedlander, merchandising consultant.

Willis H. Slane, Jr., secretary, Slane Hosiery Mills, High Point, N. C., was elected chairman of the board of the association. He succeeds Raymond R. Rice, whose term as chairman expired.

Charles W. McCrary, president, McCrary Hosiery Mills, Asheboro, N. C., was advanced from second vice-chairman to first vice-chairman. *Gordon Hanes*, president, Hanes Hosiery Mills Co., Winston-Salem, N. C., was elected second vice-chairman. *Curt Seifart*, secretary, Hudson Hosiery Co., Charlotte, N. C., was re-elected treasurer. All officers' terms are for one year.

Knitting long staple yarns? Here's how to

prevent loop-outs



by Winston Shewmake
Exclusive

A SIMPLE alteration on the sides of yarn feed fingers in knitting machines that utilize the take-up system will permit the running of long staple yarns with added efficiency and profit. This take-up system (manner in which tension is maintained on certain yarns during knitting cylinder oscillation) is common to most circular knitting machines of modern design.

Likewise, running long-staple yarns, such as wool and synthetics blends, causes an enormous amount of trouble, especially waste and sub-standard production caused by "loop-outs." Some manufacturers have tried to run long-staple synthetic yarns and have given up because of this persistent trouble.

The major cause of the trouble is simple but practically invisible. It is the fibers being trapped or pinched between the yarn feed fingers on the knitting machine, thereby holding the yarn at that point and preventing the free run of the yarn through the feed finger eye. This eliminates the required tension on the yarn, and a loop-out occurs.

The fiber which is trapped or pinched is usually a single or so small that it will be difficult to detect with the naked eye. Since the trouble is difficult to detect, some manufacturers have passed up some good orders for fear they could not show a profit on long staple yarns.

Correction is made by merely spacing the yarn levers far enough apart to prevent any trapping or pinching of filaments. *Fig. 3* shows this correction.

The fingers on the left have not

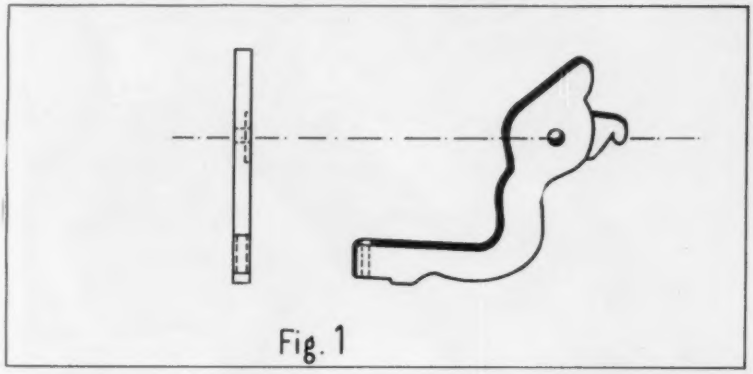


Fig. 1

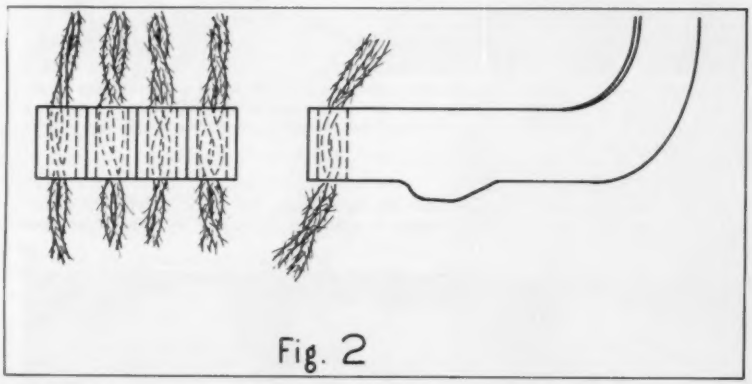


Fig. 2

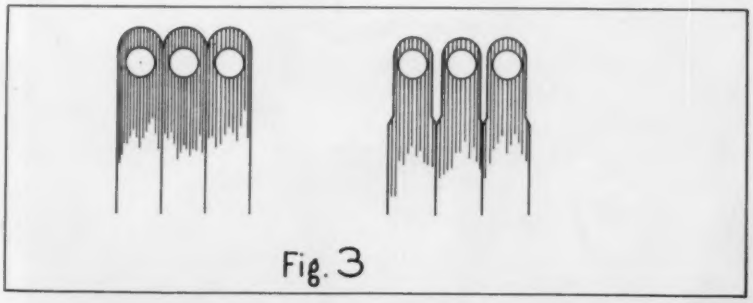


Fig. 3

Fiber ends in long-staple yarns often become caught between the ends of the feed fingers, holding the yarn at that point and preventing the free run of the yarn through the feed finger eye. With yarn tension thwarted, a loop-out results. Figure 1 shows a normal feed finger; Figure 2 demonstrates the yarn fuzziness that brings on the difficulty. Figure 3 shows corrective clearances.

been polished or ground off on the sides. Movement up and down within the throat plate, or mouthpiece, on the knitting machine of these fingers will trap and hold yarn fibers.

However, the fingers on the right which have been polished do not rub the adjacent fingers at the critical area, and fibers cannot be trapped between them.

Fig. 1 illustrates a finger (before being altered) of the design referred to, while *Fig. 2* illustrates long-staple yarns the same as those shown in the photo.

The knitting of long-staple yarns is desirable, especially in the hosiery industry. Long-staple production will increase the variety of blends being knitted as well as produce a lighter, softer, more durable sock that is readily marketable.

What one underwear manufacturer did to boost sales, cut costs

Packaging efficiency was increased with this automatic machine which overwraps 900 dozen garments per day in polyethylene film. The operation requires the full time of only two people—one feeds the underwear into the machine; the other places the wrapped garments in boxes for shipping.

Among the items packaged in polyethylene are boys' briefs, tee shirts, athletic shirts, and boxer shorts. Attractiveness of the packages is enhanced by use of two and three-color printing on the wrapping material.

UNION CARBIDE PLASTICS CO. PHOTOS

■ A SWITCH to polyethylene packaging is directly responsible for a 15 to 20 per cent increase in sales and a $20,000 saving in costs, according to R. Wise, president of Cinderella Knitting Mills, Inc., Denver, Pa., manufacturer of men's and boys' underwear.

The company discovered that polyethylene wrapped garments were being selected by customers before identical garments wrapped in other materials. Savings were realized through use of polyethylene bag-packaging and, more recently, automatic overwrapping in polyethylene film because of fewer rejects, less wrapping material waste, and the ability to stock large quantities of film, without danger of deterioration.

Although this large manufacturer of underwear has been profiting from polyethylene bag-packaging for five years, it was only a little over a year ago that the firm started using a Hayssen machine for overwrapping some of its products automatically in polyethylene. A single machine wraps 25 per cent of the 264,000 garments produced by this company each week. More than a dozen different sizes of overwraps are used on the same machine.

Mr. Wise is now attempting to convert the wrapping machinery designed for use with other packaging materials to polyethylene, so that the company's entire output can be automatically packaged in polyethylene film.

Along with the cost savings, Mr. Wise said, the increased dealer and consumer acceptance of polyethylene-packaged garments is impressive. He quoted an official of a leading department store: "Polyethylene packaging gives the product a smarter, richer appearance, and a much softer feel. The garments retain their soft, fresh feel throughout a long shelf life."

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2. The Franklin Compressible Spring assures uniform density of packages and hence uniform shades.
3. Franklin's unequalled laboratory facilities and half a century of experience assure strict quality control and the know-how to cope with difficult dyeing problems.

Get in touch with our nearest plant or office and let us quote on your yarn dyeing requirements.

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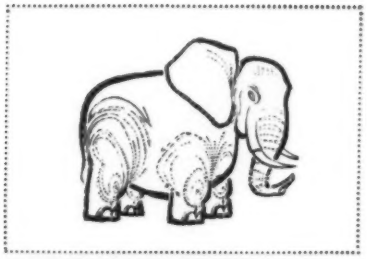

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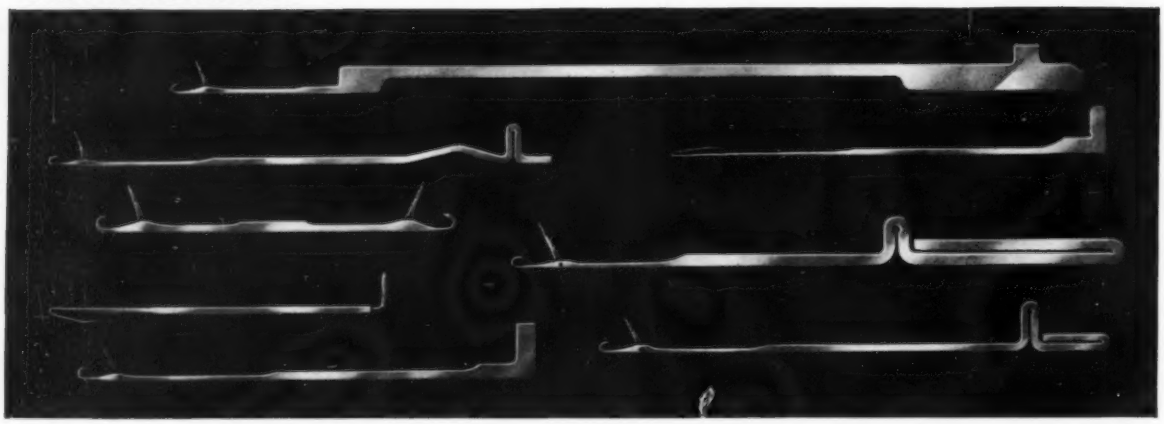
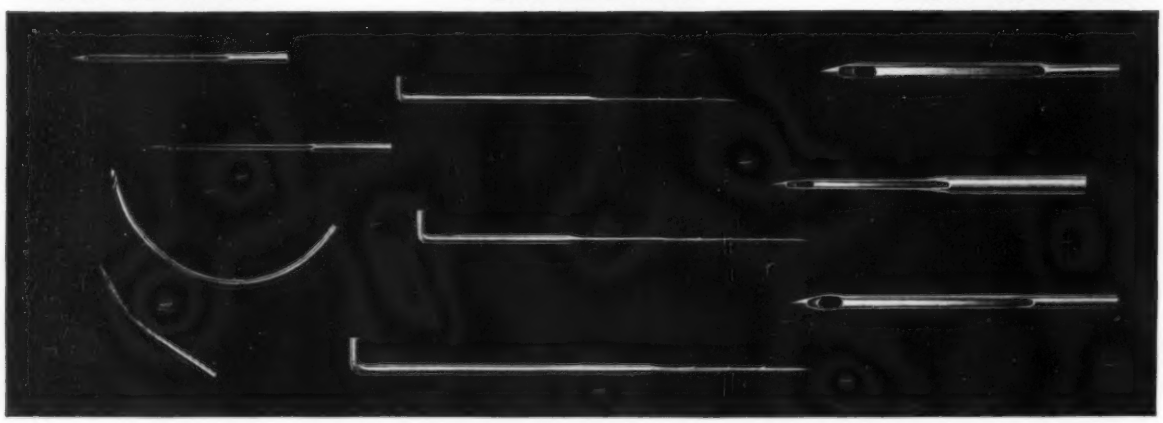


FOR SEWING FOR FELTING FOR TUFTING



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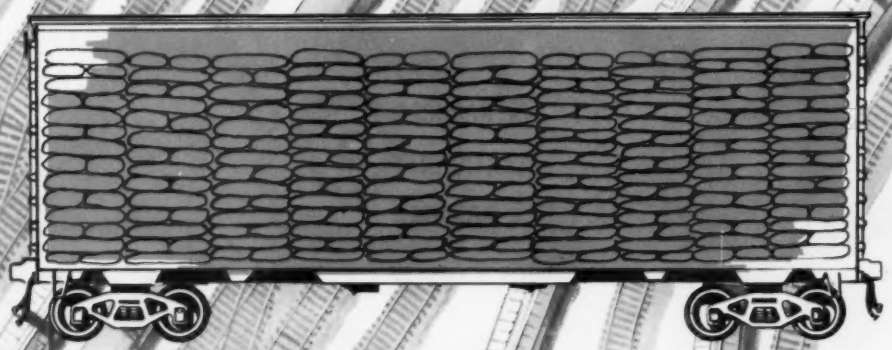

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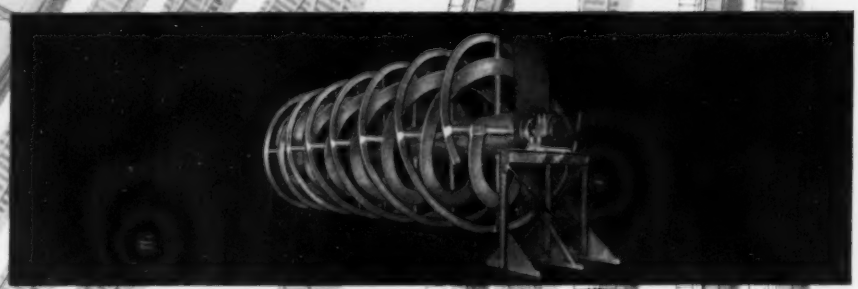

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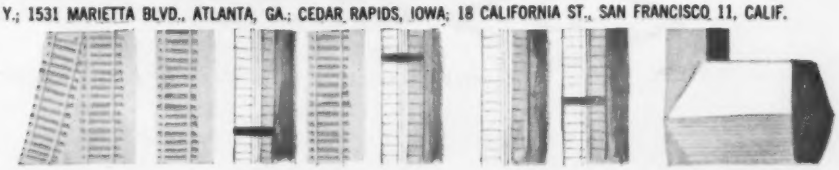

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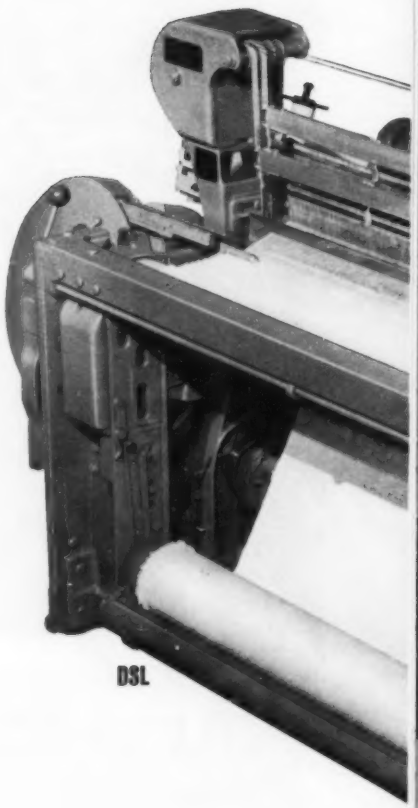

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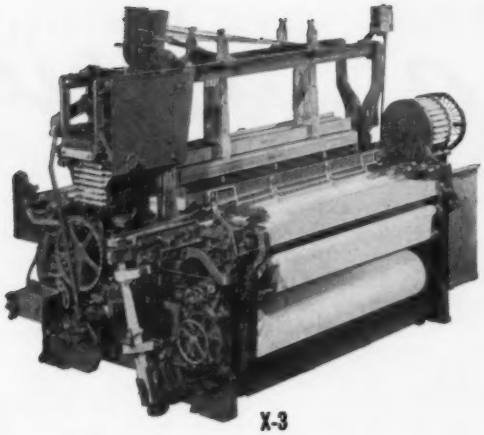
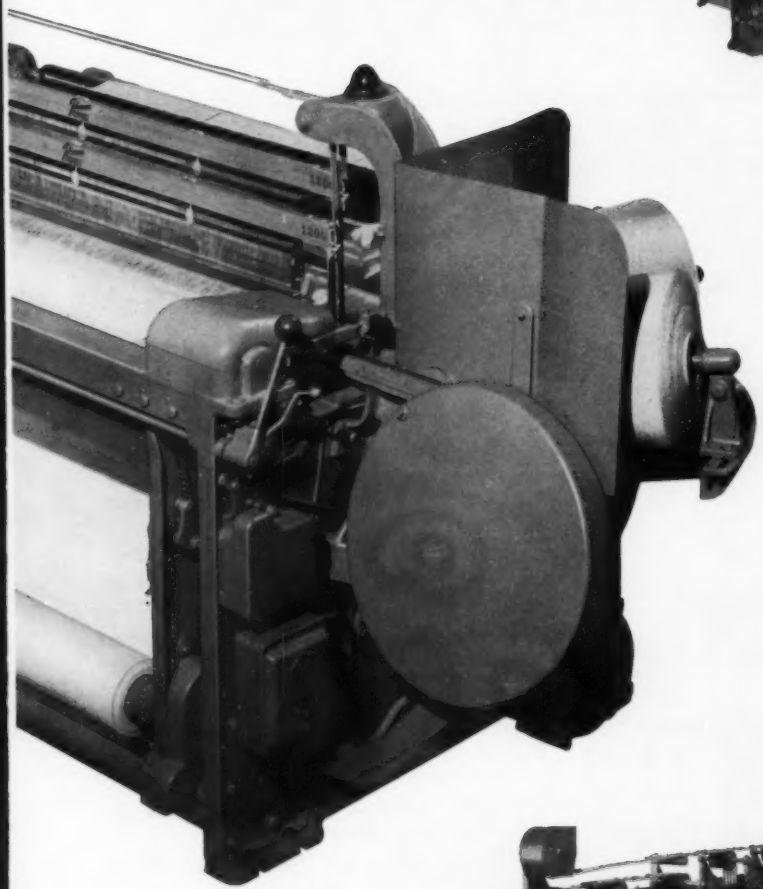
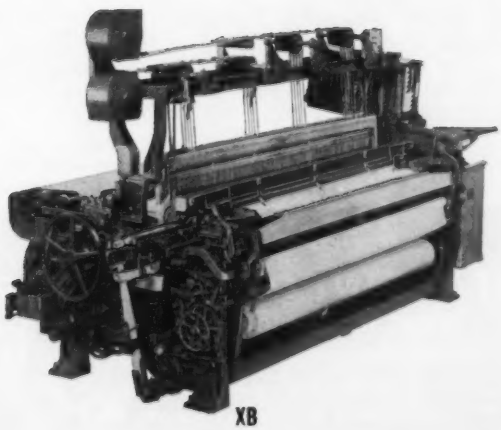


X-3





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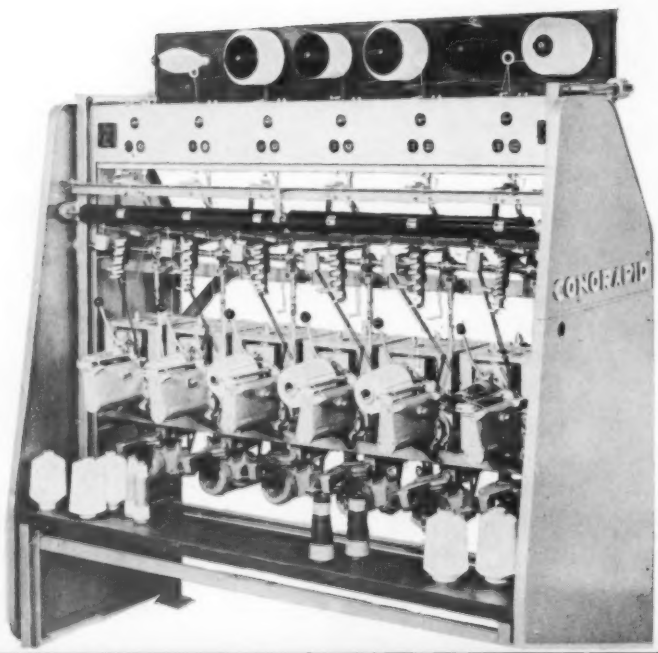
The superior design of the "CONORAPID" Precision Cross-Winder eliminates vibration and greatly reduces noise. Average number of packages produced is increased by 1½ to 3 times because of its greater operating speeds which range from 2,000 to 4,000 rpm. Yarn guide is of basically new design—owing to fast oscillation. Despite greatly increased revolutions the yarn guide traverse ensures crossing ratios well within normal requirements.

Tension tests (conducted with electric measuring device) indicate uniformly low fluctuation. Average tension during build-up of complete package can be maintained at a constant low, or can be slightly decreased. This assures a firm build-up and uniform hardness from inside to outside, including the surface of the package. Unwinding is similarly assisted and improved.

- *2-4000 rpm operation speed.*
- *1½ to 3 times greater production.*



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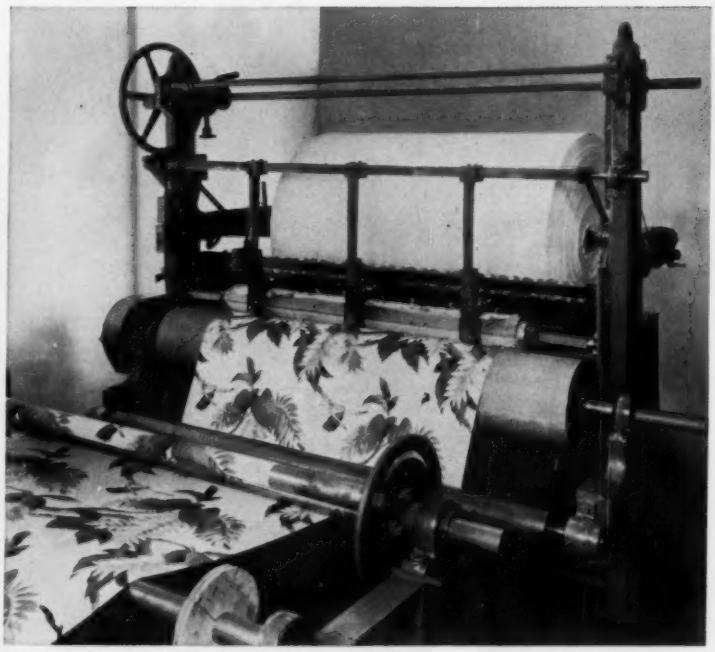

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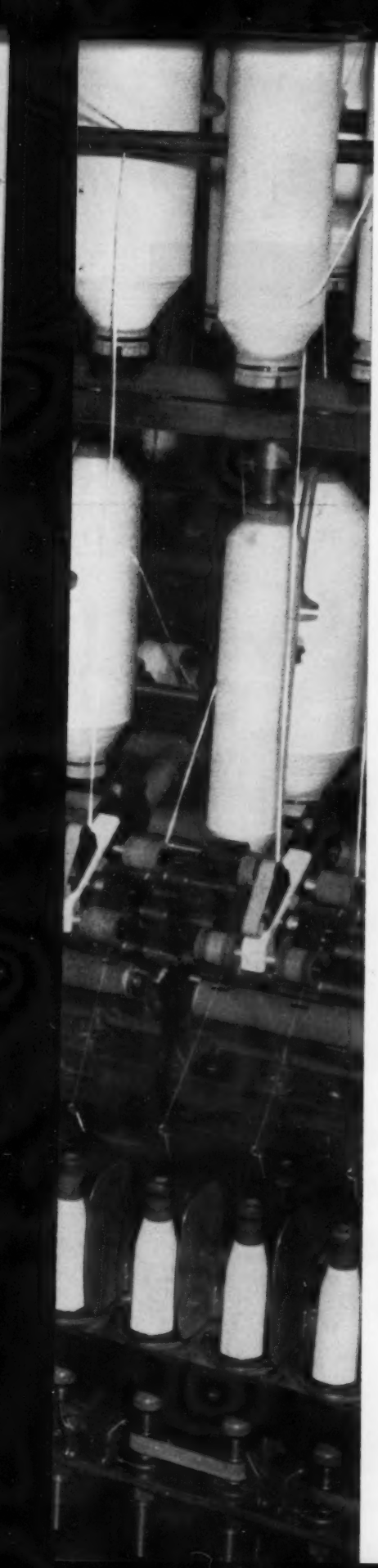

"Hack" Wilson, Overseer of Spinning at Highland Park Mills, Charlotte, N. C., discusses spinning cot performance with Armstrong representative J. T. Vernon.

Accotex Cots can help you keep yarn quality high

No two mills are exactly alike in equipment or methods. And every change made in drafting systems . . . or in fibers being spun . . . sets up new conditions. That's why there can be no universal cot material that will work equally well on every combination of frame or fiber.

In the broad line of Accotex Cots, however, you will find a roll covering which will help you eliminate trouble and get good performance with any fiber . . . on any high-draft spinning frame.

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On some frames, soft cot materials have been found to improve break strength and reduce yarn irregularities. Accotex Cots made of softer compounds are available to meet this need.

Your Armstrong representative will be glad to help you select the Accotex Cot that will give best performance with your frames and fibers. Call him or write Armstrong Cork Company, Industrial Division, 6506 Ivy Street, Lancaster, Pennsylvania.

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1860–1960 Beginning our second century of progress

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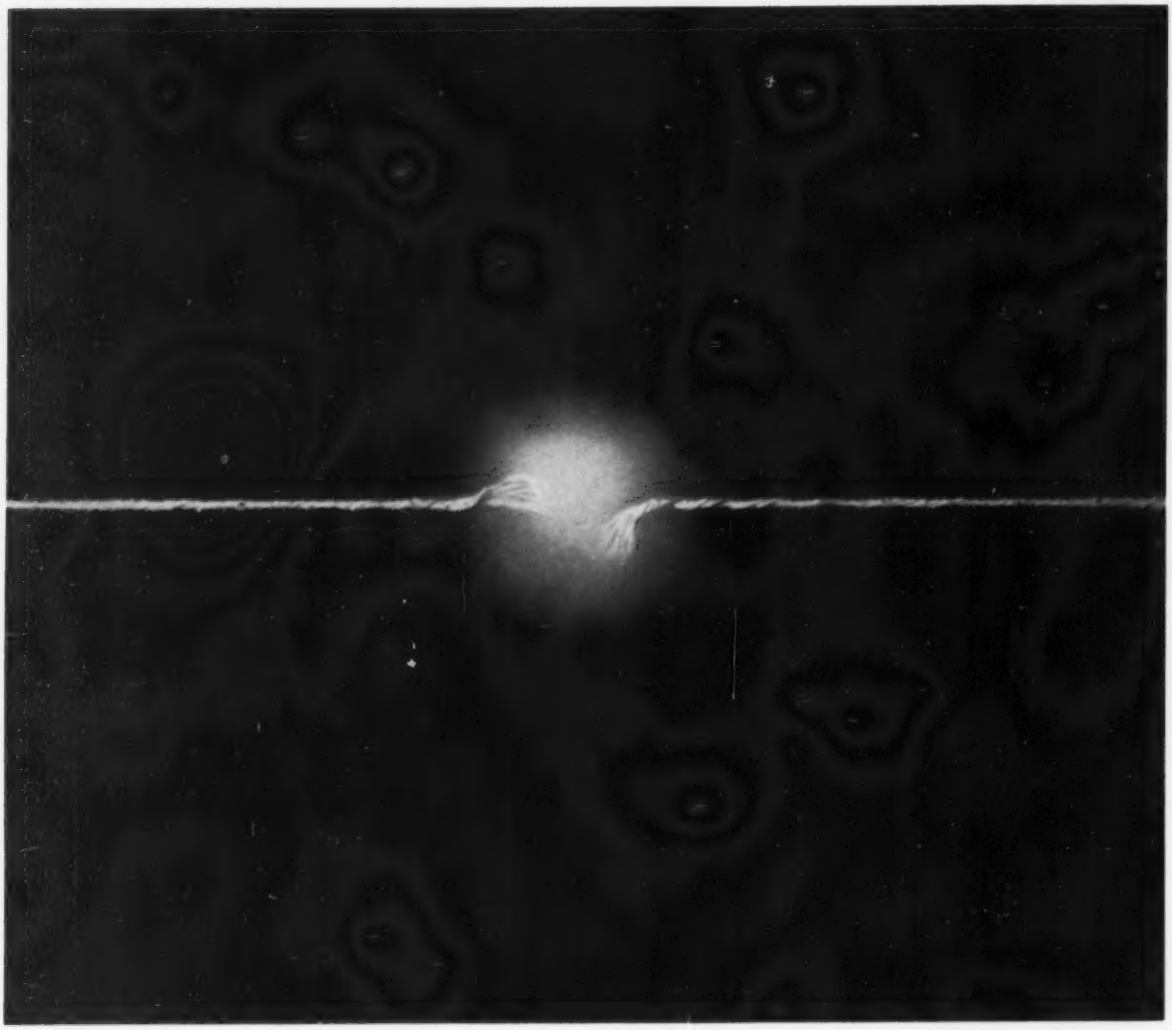

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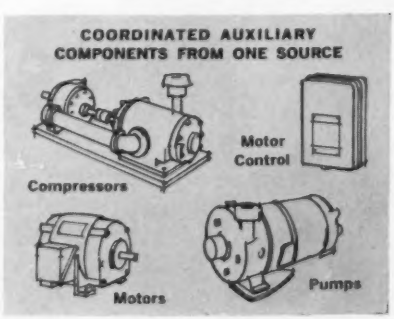

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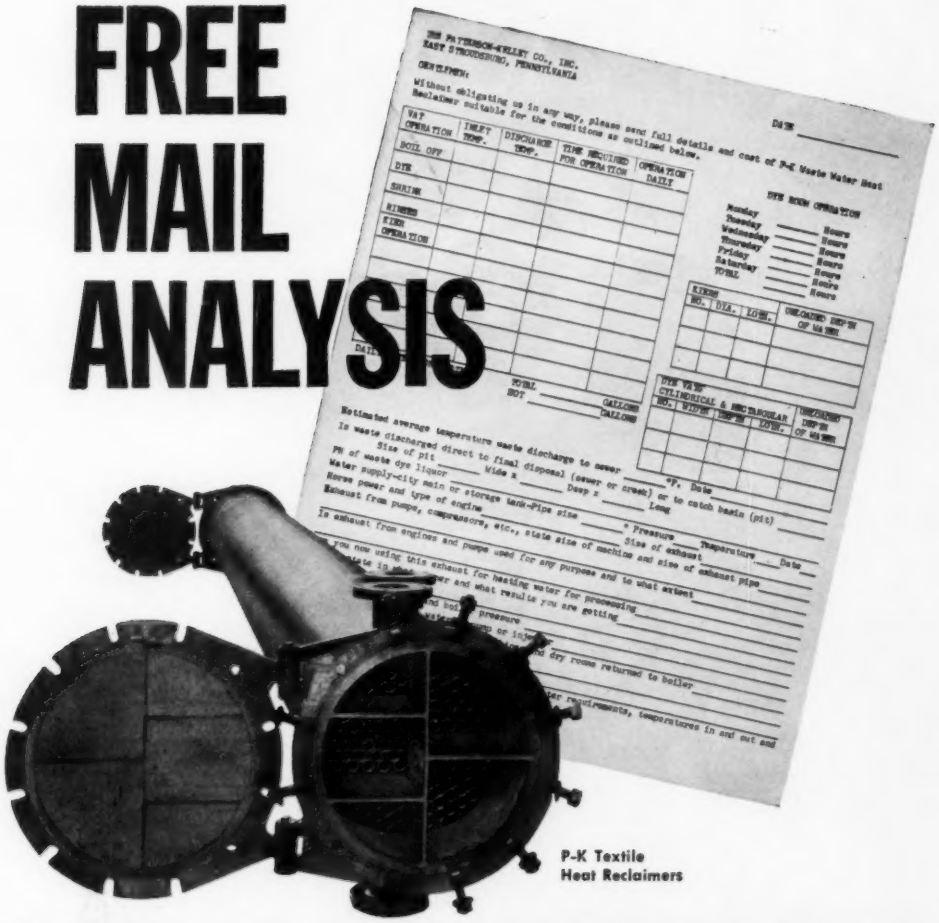

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A simple economy takes place with P-K Textile Heat Reclaimers. Waste hot water pre-heats incoming cold water. This recovers 25-50% waste heat. It reduces fuel costs. It increases boiler capacity. Savings run $8,000 a year and more. Installations pay for themselves completely in as little as nine months!

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20

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Shows details you've never seen before

NEW CARRYING CASE . . . provides convenience in use . . . full enclosure for protection against damage. Has permanently attached cover and line cord which can't be lost . . . cover also doubles as convenient, adjustable stand.

Intense, white light of extremely short flash duration (one to six millionths of a second) "freezes" motion and shows clearly a degree of detail that is invisible with other commercially available stroboscopes.

Improved contrast — new *white* light 70 times brighter than previous model, provides spectacular improvement in viewing conditions; lets you clearly see fine details of rapidly moving objects under normal mill lighting.

Long-throw beam — basic new tube developed exclusively for this instrument produces concentrated beam that greatly speeds spinning-frame checks. Operator no longer needs stop every few feet to hold Strobotac close to each spindle. Long-throw light can now be aimed along the row of spindles from the aisle and speed deviations noted as the operator walks by without stopping.

Type 1531-A STROBOTAC . . . $260

PIVOTING LAMP . . . can be rotated 360° in horizontal direction and 180° vertically. Lamp can now be aimed at object under investigation while instrument is held in most convenient position for clear, head-on view of calibrated rpm scale.

EASIER TO USE . . . only one simplified dial and range switch on top of instrument controls rate of flash, and one scale on the dial is illuminated at a time. Direct reading — no more multiplying factors to remember. Errors can no longer be caused by accidental reading of the wrong scale.

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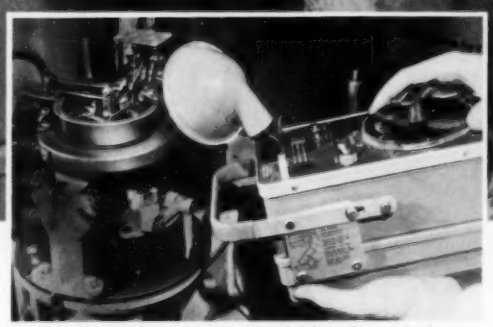

Needle-latch operation, needle alignment, and sinker action are clearly seen in slow motion, while rotating-cylinder hosiery knitter runs at full speed. Uneven tension caused by floating of feed yarn can be seen.

Long-throw beam spotlights details of loom operation, such as shuttle behavior and feeler and picker-stick action. Accessory Type 1535 Contactor synchronizes the flash with loom operations . . . "stops" the object under observation in any desired position in its cycle. Where room illumination is high, or loom speed is slow, the higher intensity Type 1532 Strobolume triggered by the Strobotac or Contactor, is often useful.

1% Accuracy — permanently insured by panel neon-bulb calibrator; makes quick checks easy

Speed range extended upward to 25,000 rpm, direct reading; useful to approximately 250,000 rpm. Lower limit is 110 rpm, direct reading; lower with external contactor.

Weighs only 7⅛ pounds — ⅔ size of older model.

Convenient neck strap supplied with Strobotac, frees operator's hands and prevents dropping.

Some of the Many other uses for the STROBOTAC

Spoolers—checks sloughing tendencies of supply bobbins and makes possible the inspection of reversal points and running position of yarn in traverse guide.

Roving Frames — Detects uneven spindle speed within a given traverse. Lets you see roving passing through the flyer eye, whether there is excessive lint collection, and if roving is protruding through slot in flyer arm. Running position of presser, its delivery to the surface of the bobbin, and pressure it applies to yarn can also be observed.

Filling Winders — Spots bobbin oscillations or erratic motion of traverse wheel causing irregular package diameter.

Woolen and Worsted Pin Drafters — Checks combing uniformity, penetration and alignment of faller combs — reveals serious wear of faller bar or lifter cam. Also useful for detecting flat spots and eccentricity of drawing-off roll.

. . . and countless others.

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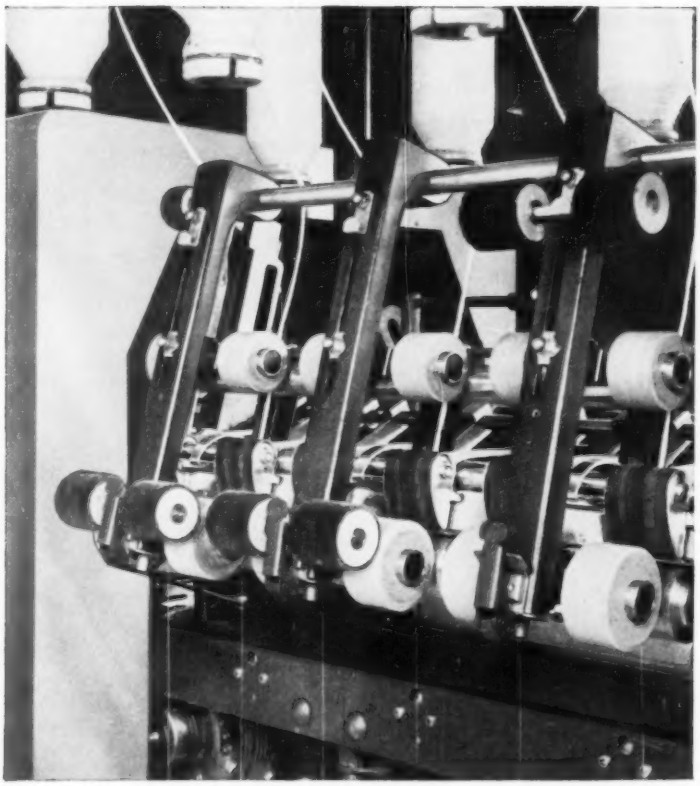

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This new spinning system offers mills the opportunity to substantially improve quality and greatly reduce production costs. Designed to process worsteds, synthetics and blends in staple lengths from 1.5" to 9" indicating flexibility and versatility never before obtainable. In addition, increased drafts, as much as 50%, with a marked improvement in quality are possible. Complete anti-friction design cuts lubrication time by two-thirds or more, eliminates dirt and lint collecting oil film resulting in reduced maintenance costs.

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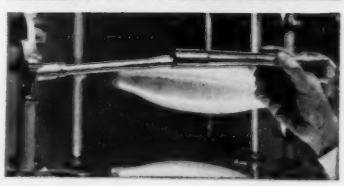

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HOW OTHERS MANAGE

Aniline black printing or aniline pink printing?

THE EDITORS:

Certain problems are associated with printing aniline black. However, if formulations have been refined over the years, and the proper equipment has been assembled for aging and after-treatment, giving consideration to time-temperature - concentration relationships where necessary, the end result should be a consistently high productivity with satisfactory shade control. Under such conditions only a normal amount of technical supervision is needed.

In the past, the problems inherent in the application of aniline black received much attention from researchers, chemists, and practical colorists. At the same time, manufacturers continued to improve the quality of the aniline salt.

Today, aniline black printing is an established science. But even though formulations are universally known, colorists have their own modifications of these which they feel best suit local conditions of application and best meet end requirements.

Of the problems that have come under study, at least three received much attention: The tendering of the cotton fabric; etching of the doctor blade; and formation of rosaniline, as chemists refer to it, which lends a pinkish cast to the black and stains the white grounds.

The problem of tendering has been virtually eliminated by the development of fiber-protective agents. These are commercially available and are incorporated into the formulation.

This writer recalls the aniline black process of more than 20 years ago when no waiting periods could be tolerated between printing and aging, and between aging and development. Such precautions are no longer necessary.

Etching of the doctor still occurs with some costly frequency, at least in this writer's experience, though it has never been regarded as a major problem. Presumably, it is caused by the oxidizing action of the formulation which can be accelerated by low pH or an increasing temperature.

The third problem, the formation of a "pink" black, is somewhat more elusive (in this writer's experience), though it, too, has never occurred in sufficient yardages to justify a long investigation. Plant chemists and colorists generally agree that this condition occurs in aging through the formation of rosaniline—a not-so-fugitive stain.

It is recommended by some that

WIN $100 KEEP REACHING FOR THOSE IDEAS! WIN $100

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance and the $100 award will be made as soon as all entries are judged.

The contest rules are simple:

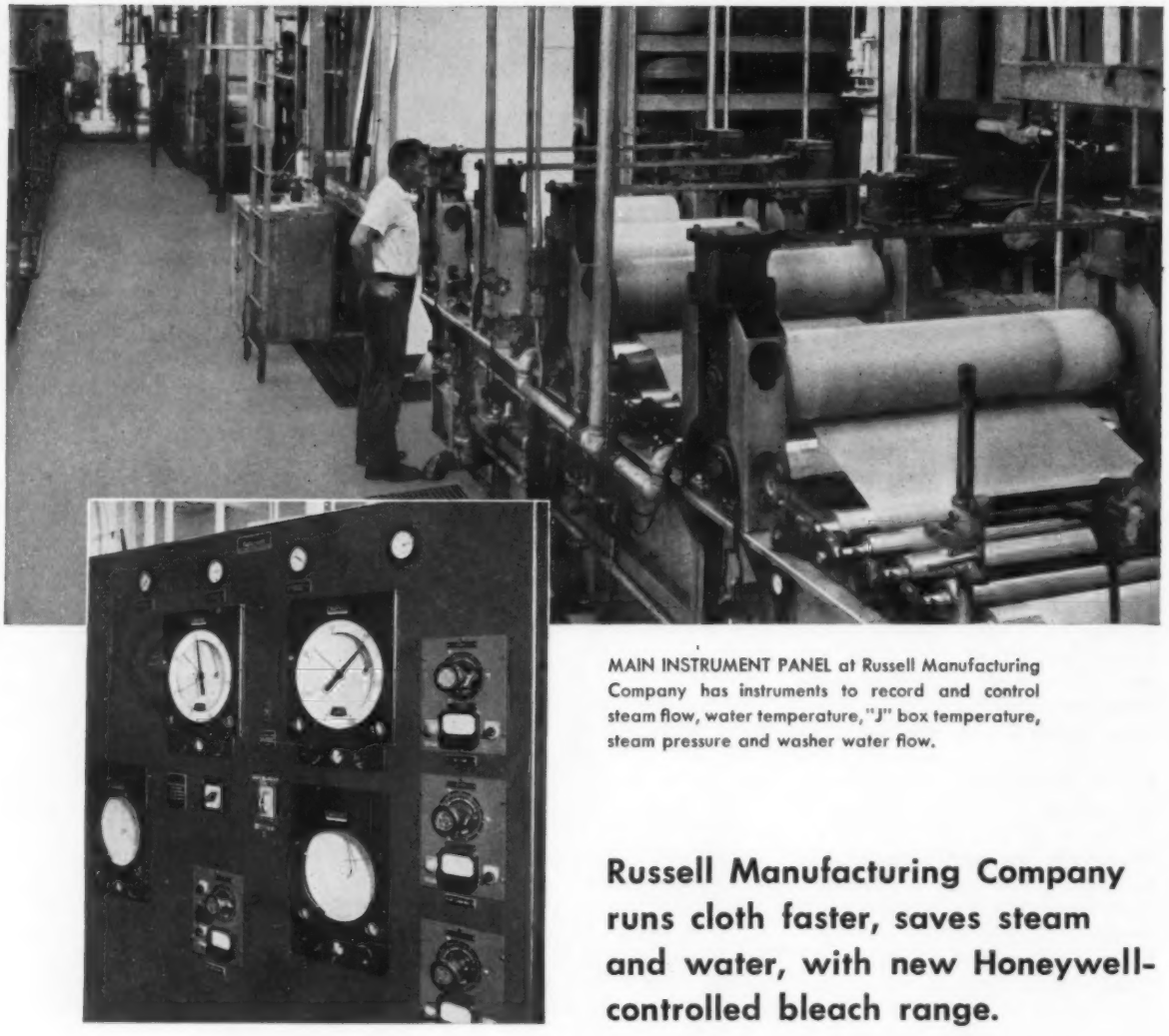
► All contributions must be postmarked not later than midnight, August 15, 1960.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.



MAIN INSTRUMENT PANEL at Russell Manufacturing Company has instruments to record and control steam flow, water temperature, "J" box temperature, steam pressure and washer water flow.

Russell Manufacturing Company runs cloth faster, saves steam and water, with new Honeywell-controlled bleach range.

Russell Manufacturing Company of Alexander City, Alabama has combined rope and open width bleaching in a fully controlled range. Honeywell designed the automatic control system which not only permits cloth to run at speeds up to 200 yards per minute, but also has greatly reduced steam and hot water consumption.

One master recording-controller positions a three-way mixing valve to maintain water temperature at the same pre-set level in all three washers. No water is wasted. It's metered in exact amounts for proper processing and shuts off automatically after five minutes of range downtime. This saves an estimated 1,250 gallons of hot water alone every time the process is shut down.

Through the combination of open width in "J" boxes, desizer, and padders and rope form in the washers, Russell saved $33,000 in equipment and installation costs and 35 feet of floor space.

In your own mill, automatic control can upgrade product quality and bring new economy and efficiency to any process. Your nearby Honeywell field engineer can tell you how. Call him today . . . he's as near as your phone.

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the best preventive measure is adequate ventilation during aging. But in this chemist's experience rapid exhaustion of ager fumes has not altogether proved a satisfactory answer.

No doubt, an undesirable reaction occurs to cause this inferior black, which incidentally has a reduced fastness to light and washing. Besides, the pink stain is not simple to remove.

One colorist of the writer's acquaintance has recommended that the temperature of the oxalic acid bath be kept at about 110-120 F when after-treating the permanganate - padded and dried black. (These treatments, as everyone knows, follow the oxidation of aniline black in bichromate of soda.) This precaution appears to have some merit; nevertheless, experience has shown that the pink condition still occurs.

Prolonged soaping at high temperatures certainly does little to help stain removal; in fact it seems to aggravate the condition.

If the yardages involved are small and the pink staining occurs infrequently, the problem is of no major importance. On the other hand, if the problem affects increasing yardages, it must point to a fundamentally faulty condition which requires a long and hard look.

In such case, it might be worthwhile to begin the investigation with the formulation itself, and assure one's self that the aniline salt-chlorate-ferrocyanide ratio has not been altered in color shop routines.

It happens on occasion that even an established formulation, which has worked successfully for years, needs some adjustment; perhaps to compensate for conditions which have changed imperceptibly in other phases of the operation.

To remove the stain with some degree of success, and without ill effect to the black, sodium hypochlorite appears to be of benefit, though it is recognized as a destructive chemical agent for aniline black. In the limited experience of this writer, it has worked successfully on small yardages, when used at very low concentrations and in a slightly alkaline condition.

This experience may be useful to other plant chemists and colorists who run into the problem of rosaniline-stained goods. But it is not a preventive measure.

It is possible that these experiences in printing aniline black are not similar in all details to those of other colorists. Perhaps some practical suggestions will be forthcoming from readers not only on the problem of staining but on etching of the doctor blade.

CONTRIBUTOR No. 1237

Fixed card feed rolls prevent plucking

THE EDITORS:

This article is to be built around the problem one mill man was having and one which all mills more or less have.

The same problem, licker - in plucking, sometimes sees half the width of the lap jerked into the cylinder.

Such plucking can damage a card severely, can even wreck it completely. To be more specific: broken mote knife; broken mote knife brackets; torn up screens; bent back and front knife plates; broken cylinder and doffer clothing; and broken top flats may result. One such accident can easily cost as much as $450.00.

There are several ways to hold the feed roll down. The feed roll weights or springs may be kept as they are or they may be removed.

If long feed roll bearings are used, bend a length of ¼" x ¾" flat iron into a horseshoe, twist the ends of the horseshoe until they will lie flat against the feed plate, drill the ends to receive ⅜" cap screws, then drill and tap the feed plate to receive the same two cap screws—in the position the holes assume once the horseshoe is placed over the top so the feed roll bearings are allowed to dangle. This assembly will not permit the feed roll to rise.

If there are short feed bearings involved, make the same assembly to bend around the feed roll neck or use a piece of flat iron wide enough to allow it to be drilled and slipped over the feed roll neck. If the latter system is used, trim away the excess bar or flat iron stock along a circle concentric to that of the feed roll neck bore and exceeding its diameter by about 1½".

By way of refinement a grease cup can be fitted into each bearing and the grease cup then filled with woolen scraps or pieces of slasher cloth. Over this woolen wick, pour oil until the cup is filled. It then wicks as needed through the woolen fibers and into the stem of the cup from whence it finds its way to the feed roll necks.

CONTRIBUTOR No. 1238

Got take-up troubles?

THE EDITORS:

Here is a hint on what to look for when the take-up on the Scott & Williams knitting machine stops pulling. Sometimes the take-up will ease on down and hit the bottom just as it does when the belt needs cutting. When it is established that the belt does not need cutting, look to the set screw which holds the worm on the take-up. When this screw becomes worn sometimes it will make the knitter "madder'n hops" trying to locate the trouble. Replace the screw if necessary, for sometimes it wears so blunt it will not hold.

CONTRIBUTOR No. 9018

Card fillet a slashing aid

THE EDITORS:

To attach a warp to the loom beam without using aprons, bunches, or holes, tack a one- or two-inch strip of used card clothing along the length of the loom beam, leaving a two-foot section blank at each end of the beam to allow for flange adjustment. The direction in which the knee is pointed is not important.

Stick the yarn to the clothing

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Photo Courtesy of U.S. Rubber Company

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In mines and quarries—and wherever heavy duty performance is essential—conveyor belts fabricated of high-strength Golden Caprolan nylon are superb.

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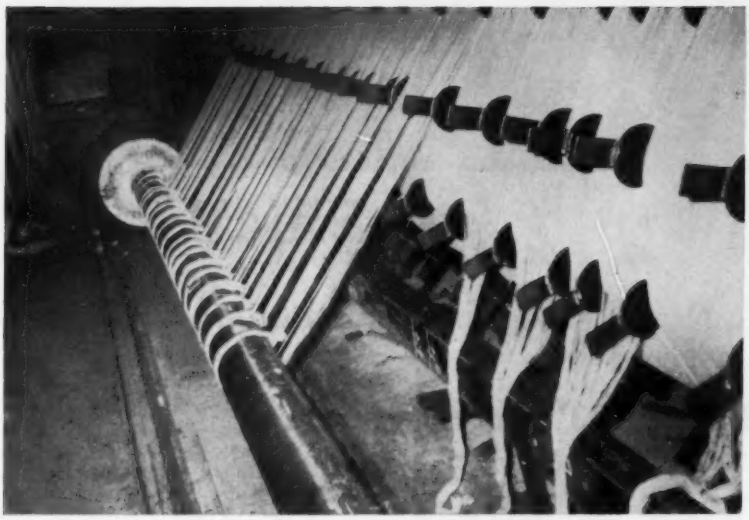


by hand, pass a rubber roller over it to imbed it into the wire, give the beam a full turn by hand to lap the yarn sheet, and turn on the power.

The method saves both on labor and on bad cloth (ripples) caused by the high and low places of the old system.

CONTRIBUTOR No. 1239

Keeps stored sliver pressed into cans

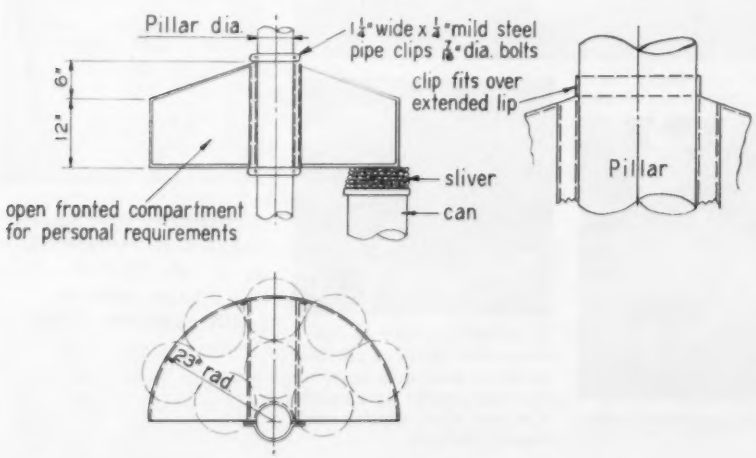
THE EDITORS:

It is common practice in some mills for can tenders to bring full cans from the cards and lean them against the pillars at the rear of the drawing frames. Sometimes the slivers expand out of the cans and fall onto the floor.

The sketch shows a full-can sliver support arrangement which is slipped onto the pillar. This support is set about seven inches higher than the height of the can so that the operatives can press the sliver downwardly, push the can under the support, and let the sliver expand.

The inside of the support can be used by the drawing frame operators to hold their personal requirements. It can be stove-enameled any desired color and looks quite neat and tidy. The top is sloped to prevent articles from being stored there.

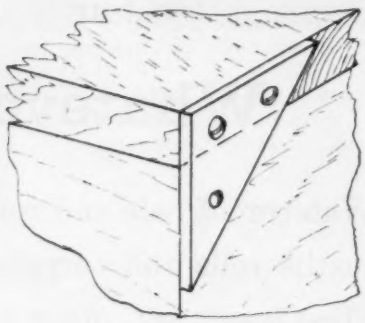
CONTRIBUTOR No. 1148
(England)



Quick, cheap hinge

THE EDITORS:

If one needs a quick, cheap, or temporary hinge for a tool box, packing case, or other object that has a lid, he can make one in a few minutes from a piece of flat metal.



Cut the metal in a triangular shape (see illustration) and drill three holes in it. Fasten the hinge securely to the lid with two screws. Leave the screw, nail, or stud that is used to fasten the hinge to the box loose enough to serve as a pivot.

CONTRIBUTOR No. 1052

Snap fasteners keep socks together

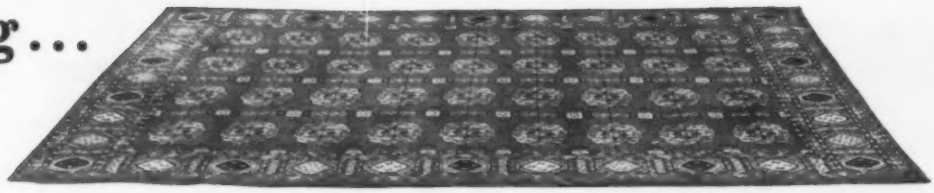
THE EDITORS

The application of simple snap fasteners onto the top of a pair of socks gives them an individual and distinguishing appearance as well as serving a useful purpose.

By applying such fasteners onto the sock tops, several practical features are incorporated. Socks must be in pairs to be physically functional. These pairs for some reason or another seem never to stay together for the consumer, and much time (and sometimes temper) is expended in efforts to find the other sock to complete a desired pair to be worn.

However, if the socks are equipped with these simple snap fasteners, the wearer merely snaps the socks together when he re-

Big...



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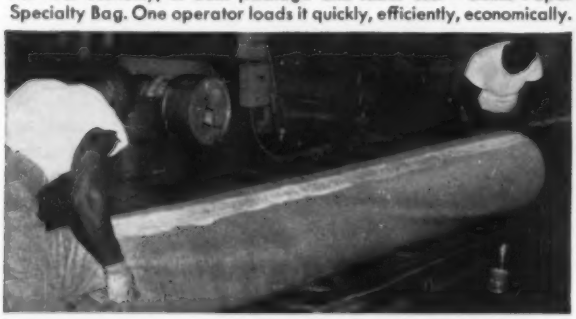

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moves them from his feet, and they stay together as a pair.

Next they are thrown into the clothes hamper, and here too they are together as a pair.

Next they enter the laundry and are cleaned as a pair, still being secured by the snap fasteners.

Next they are dried, either in a dryer or upon a line where the pair only requires one clip or pin—an additional timesaver for Mrs. Housewife.

Then when Dad pulls a sock from his sock drawer, out comes another identical sock still secured by the fasteners that he snapped together when he removed them after the last wearing.

Matched socks with neat fasteners . . . . .

Snap together to keep socks in pairs . . . . .

These fasteners have been test worn, and reports indicate that as yet there have been no unfavorable findings and that the idea is especially interesting to housewives.

CONTRIBUTOR No. 1234

Honeydew presents serious problem to South African mills

THE EDITORS:

The cotton which we are using, and which is affected by honeydew, is in fact South African irrigated cotton known as Orange River. The South African spinners are under an obligation to the Government to consume the total South African crop (approximately 36,000 bales) of which 21,000 bales are irrigated Orange River. The balance consists of approximately 15,000 bales of rain grown cotton.

In our experience the rain grown cotton in South Africa has never been affected by honeydew, but the Orange River irrigated cotton has shown this deficiency for a number of years.

The fact that the local spinners have to absorb the South African cotton has had the effect that in practically all their mixings they can mix only 50 per cent of imported cotton. The blending of the honeydew-affected South African cotton, together with honeydew-free imported cotton, has not done away with our complaints. And even in blends where we have only 20 per cent to 25 per cent Orange River cotton, the same difficulties still occur. We have also adjusted the humidity and temperature in our spinning mills, but the results achieved were negligible.

We should also mention that in our mills where we are spinning coarse-count weaving yarns the trouble is not really serious, but where we are spinning hosiery yarns in counts between 30s and 40s, we have tremendous difficulty, so much so that this matter is now being taken up by the spinners with the Ministry of Agriculture.

It would interest us to know whether there are any steps which the cotton farmer can take in good time in order to kill the insects which are the cause of the honeydew, and should there be any papers available on this subject, we shall be very glad to receive copies.

It would also interest us to know what is the position in America if a spinner receives cotton affected by honeydew? Is this considered unsound cotton? Must he accept it, or can he refuse acceptance, claim compensation, and on what basis?

CONTRIBUTOR No. 1233

(Who'll give some help on this? —The Editors)

Small blackboards have many uses

THE EDITORS:

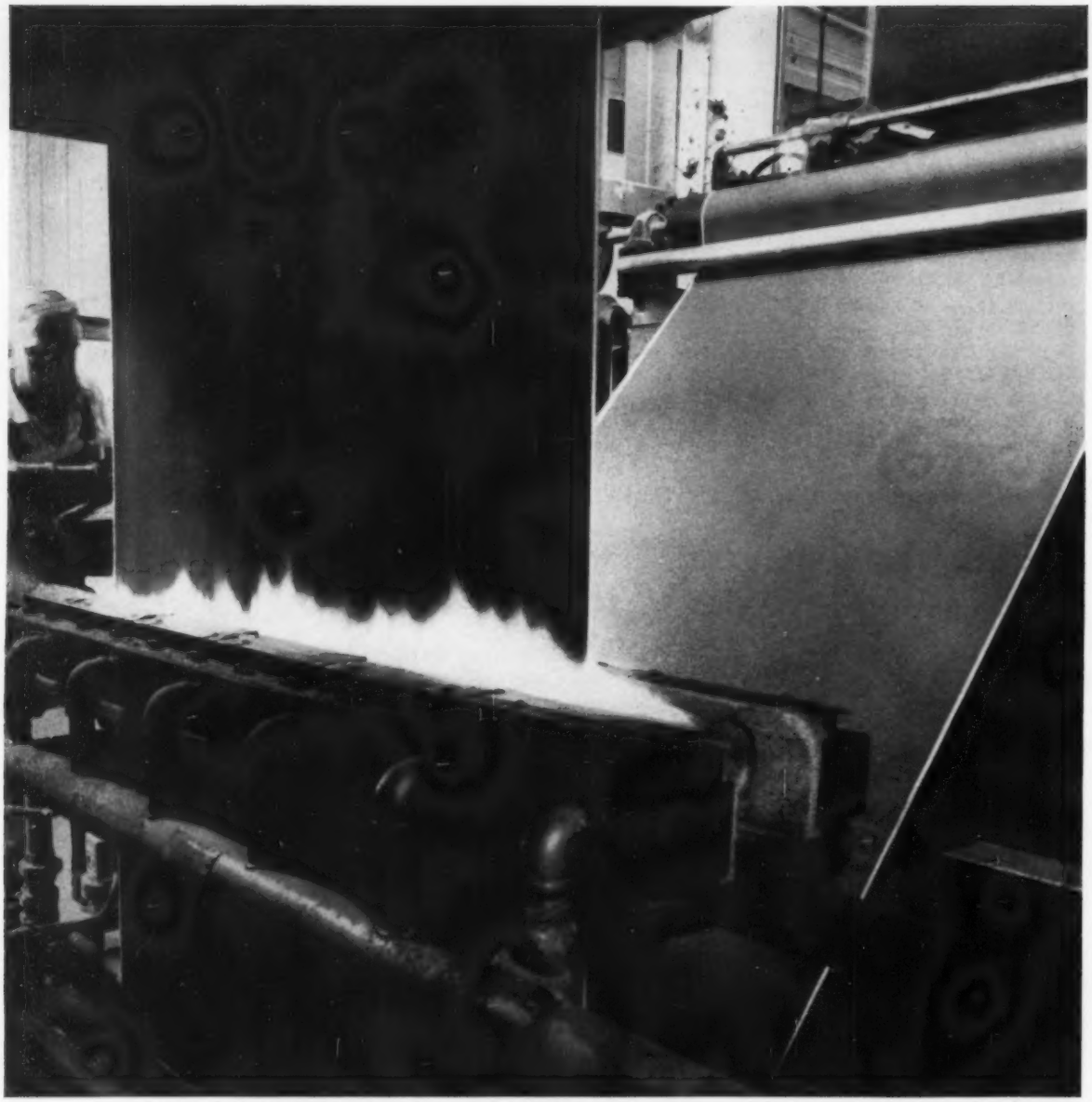
I have found a 3" x 5.65" cardboard a most useful aid in quality control work in a cotton yarn mill. The cardboard was found, after a trial period, more useful when it was dyed black.

Its uses are manifold: for instance, a drive may be on checking slubs and faulty piecings from the spinning department. The faulty bits can be mounted on the card where they will stand out like a sore thumb.

Or, knots made in the twisting department or subsequent operations may be too long. A batch of these can be picked out and attached. Nicking the blackboard will help to keep the faulty pieces in place.

Again, mixtures of different counts may occur in the twisting or following processes. The mixtures can be shown by cutting a portion of the mixed yarn so that the knot which ties the mixed ends together will be in the center of the card.

Faulty knot tying, wherein multiple ends are not tied so that all the components will be subjected



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to equal tension, can also be shown by again putting the knot showing the faulty manipulation in the center of the card.

Where checks are made to keep faulty dye shades under control the yarn can be wrapped around the card, thus showing up any variation in shade.

The material mounted should leave at least a half inch at each end of the card so that a notation can be made on the card regarding the material mounted.

The foregoing are only a few of the many uses to which the black boards can be put. Each mill will soon find those items that they may wish to have mounted.

An important feature of the boards is that each department can mount the faults from the previous department and forward them to the manager of that department. Or, the cards can be put forward as exhibits in a daily or weekly meeting of department managers convened to discuss various details, including that of quality.

CONTRIBUTOR No. 1203

A reminder that F-F machines need oil

THE EDITORS:

Our superintendent's office is adjacent to our F-F knitting machines, and in one of his office windows the superintendent has hung a sort of constant cleaning and oiling reminder—a placard from a F-F knitting machine—for everyone to see. We can easily refer to the placard for proper guidance in cleaning and oiling.

CONTRIBUTOR No. 1141

Used number code to identify wiring

THE EDITORS:

In our plant we recently did some complex wiring by identifying the individual wires as follows:

We typed duplicate numbers on separate pieces of paper and with transparent tape secured one of the numbers to each end of the individual wires. Thus, one length of wire would have the number "1" taped to both ends. Another would have the number "2" taped to both ends, etc.

When the wiring job was finished we left the number in place to permit easy tracing at any future time.

CONTRIBUTOR No. 1060

Yardsticks painted on work benches

THE EDITORS:

Does it upset you when you need to measure a take-up belt, screw, bolt, or any other thing only to find your ruler or tape has vanished into thin air? In our shop we eliminated this condition by painting a yardstick on the backs of our work benches. It is always there when needed, and, being at the back of the benches, the marks do not rub off.

CONTRIBUTOR No. 1110

How do I color code spooler starters?

THE EDITORS:

Our automatic spooler starters are made of a plastic that does not hold paint very well. We need some way of coloring them, and of changing the colors as we change yarns, brightly so as to identify the yarns they carry.

I should like to exchange views with people experienced with this problem. I have tried tape, but it is not too satisfactory, since it must be cut in small pieces and pressed onto an out-of-the-way place.

CONTRIBUTOR No. 1240

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Some items just lie on the shelf, eating up overhead. Murdering you...You make your money on merchandise that moves. Du Pont fibers help goods do exactly that: move!... Du Pont fiber trademarks are known, trusted, proven. They're miles ahead in consumer preference. (Fact: 6 to 1, consumers in a recent survey said they'd prefer to have Du Pont make the fiber in women's slips.) ... And Du Pont keeps building this preference through a broad advertising program, including "THE DU PONT SHOW WITH JUNE ALLYSON"...Yes, it makes sense to feature the fibers that help you move goods: DuPont fibers!

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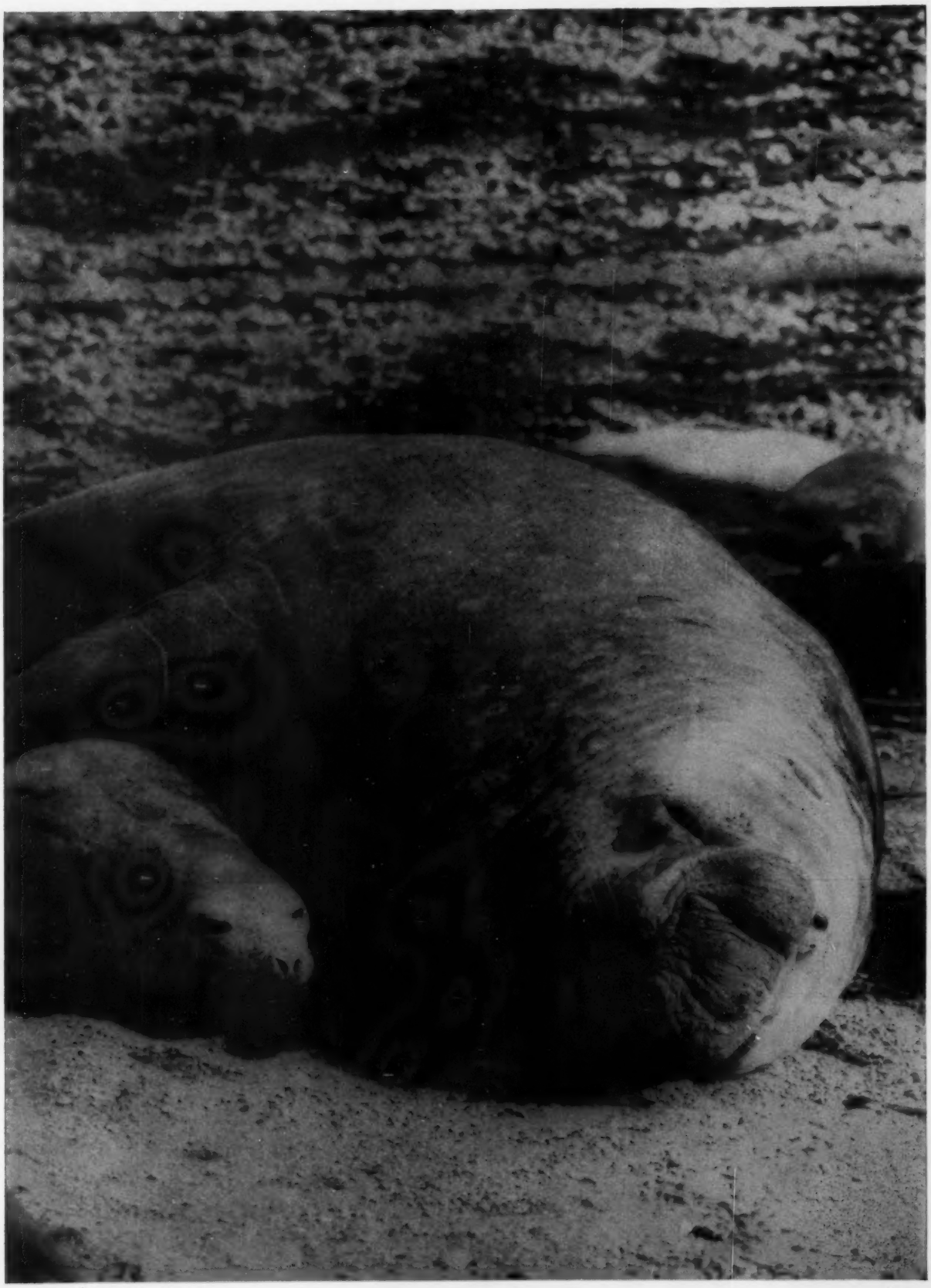
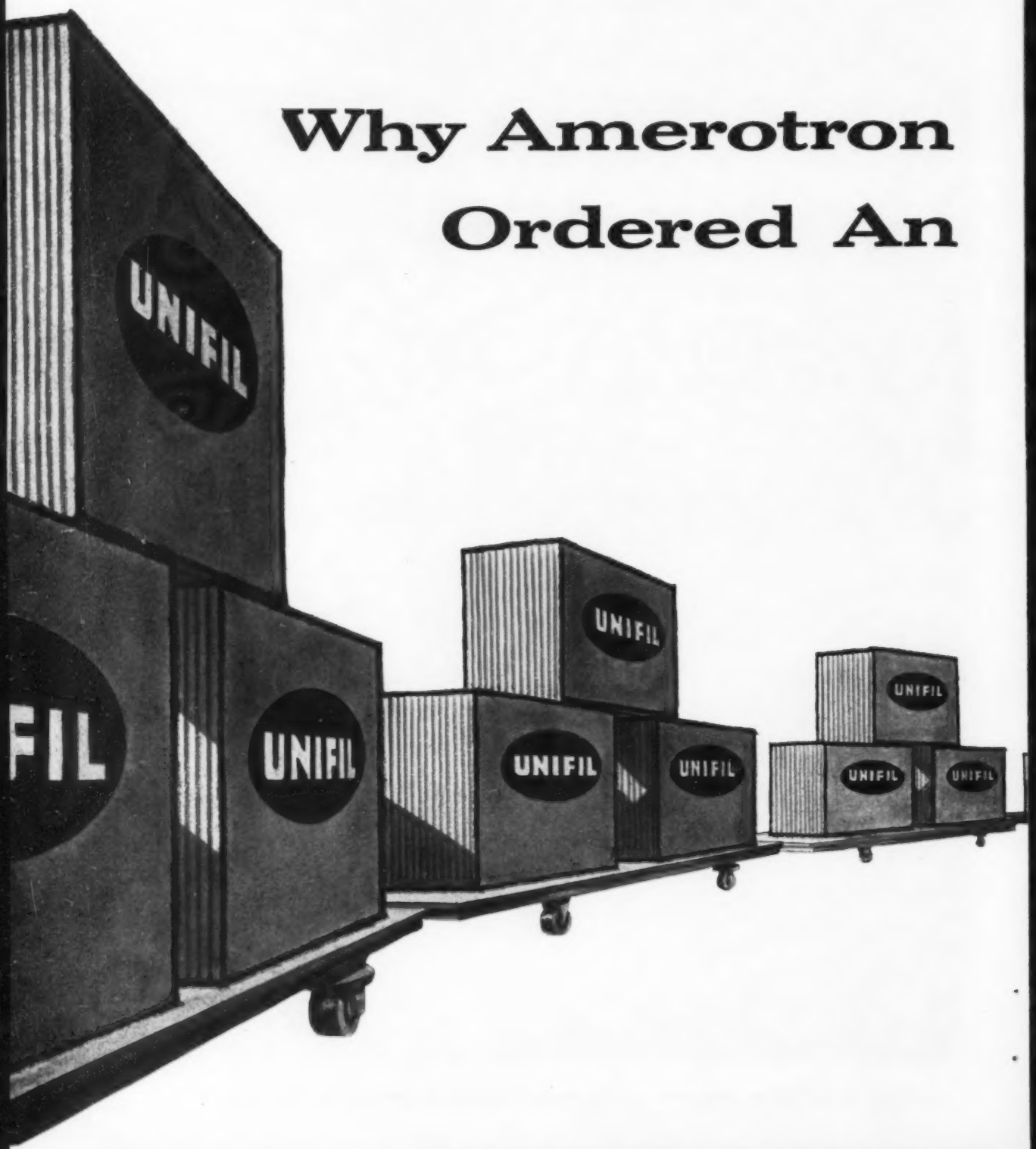
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

*Du Pont's registered trademark for its acrylic fiber. **Du Pont's registered trademark for its polyester fiber.

Enjoy THE DU PONT SHOW WITH JUNE ALLYSON, Monday nights on CBS-TV.



Why Amerotron Ordered An



There were three excellent reasons for Amerotron Company's recent reorder for 3200 UNIFIL® Loom Winders. Mr. Robert M. Cushman, Executive Vice President of this leading textile manufacturer sums them up: "UNIFIL Loom Winders already in operation in our plants have improved quality of some fabrics, and have enabled us to run more types of fabric. In addition, they made available more floor space."

It's a typical example. More and more modern weavers are evaluating, accepting, and reordering UNIFIL Loom Winders. They're depending on the advantages inherent in this advanced method of filling yarn preparation for the *extra* capabilities today's weave rooms need. UNIFIL Loom Winders efficiently and economically consolidate quilling and weaving at the loom... provide all the advantages of weaving-from-a-cone, on all types of yarn, both natural and synthetic. They greatly improve the quality of some fabrics and they give fabrics with textured yarn filling a uniformity not possible before. They're constantly opening profitable new markets for weavers everywhere.

Why not let a Leesona "Profit Factor Analysis" show you how UNIFIL Loom Winders can improve *your* weaving operations. For details on this informative survey, contact your Leesona Sales Engineer in Boston, Philadelphia, Charlotte, Atlanta, or Los Angeles. In Canada: Montreal or Hamilton. Or write LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island.

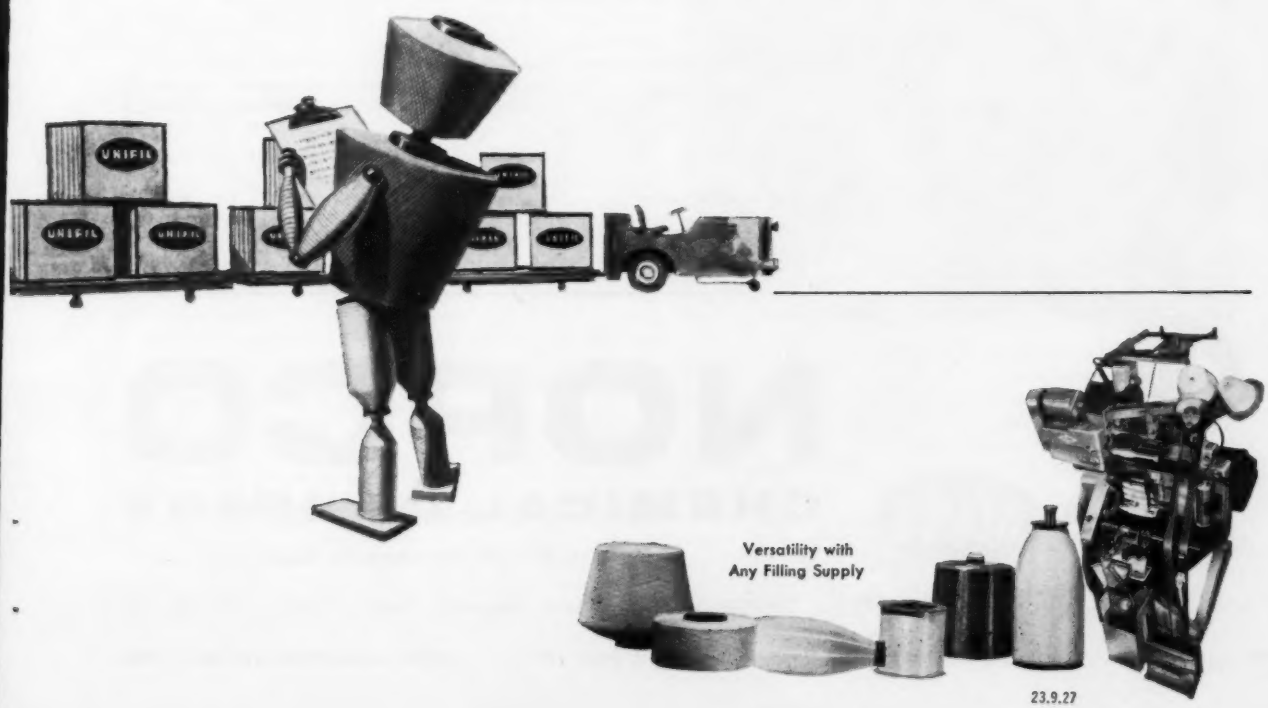
23.9.27

Additional 3,200...

Here are just a few of many modern mills which are saving with UNIFIL Loom Winders:

J. P. STEVENS & CO., INC.
PONEMAH MILLS
DRAYTON MILLS
JUDSON MILLS
UNITED MERCHANTS & MFRS., INC.
GLEN RAVEN SILK MILLS, INC.
BURLINGTON INDUSTRIES, INC.
EXPOSITION COTTON MILLS CO.
GREENWOOD MILLS
FRANK IX & SONS, INC.
MARION MFG. COMPANY
WILLIAM SKINNER & SONS
STRASBURG TEXTILE MILLS, INC.
AMEROTRON COMPANY
WOODSIDE MILLS
SPARTAN MILLS
RICHARD TEXTILES
CADILLAC TEXTILES, INC.
CANADIAN CELANESE, LTD.
CHRYSLER MILLS, INC.
CONSOLIDATED TEXTILES, LTD.
KALCO WEAVING CORP.
MARVEN LOOMS, INC.
PAXON FABRICS CORP.
PANSY WEAVING MILLS
PEPPERTON COTTON MILLS
RIVERSIDE MILLS
BERKSHIRE HATHAWAY, INC.
STANWOOD MILLS, INC.
STARR MILLS CORP.
WAUMBEC MILLS, INC.

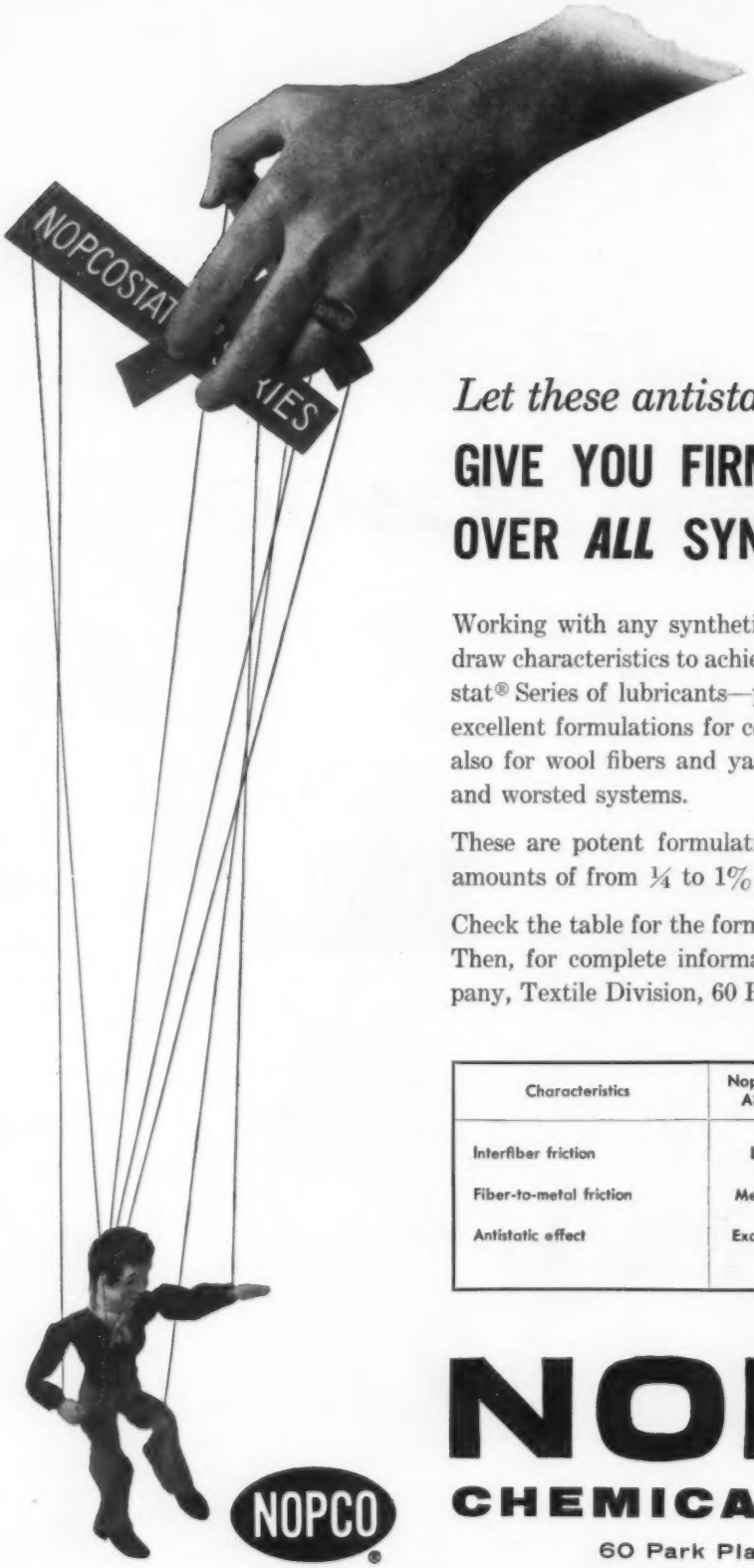
LEESONA



Versatility with
Any Filling Supply

23.9.27

A SKILLED HAND IN CHEMISTRY . . . AT WORK FOR YOU



Let these antistatic lubricants

GIVE YOU FIRM CONTROL OVER *ALL* SYNTHETIC FIBERS

Working with any synthetic fiber, it is necessary to alter the draw characteristics to achieve balanced processing. The Nopcostat® Series of lubricants—products of Nopco® research—offers excellent formulations for cellulose, polyester and acrylic fibers; also for wool fibers and yarns and yarns processed on woolen and worsted systems.

These are potent formulations, achieving desired results with amounts of from ¼ to 1% owf.

Check the table for the formulation that best meets your needs. Then, for complete information, write Nopco Chemical Company, Textile Division, 60 Park Place, Newark 2, N.J.

Characteristics	Nopcostat AS-40	Nopcostat LV-40	Nopcostat 2152-P	Nopcostat 2152-X
Interfiber friction	Low	Medium	High	High
Fiber-to-metal friction	Medium	Medium	Low	Low
Antistatic effect	Excellent	Excellent	Excellent	Excellent

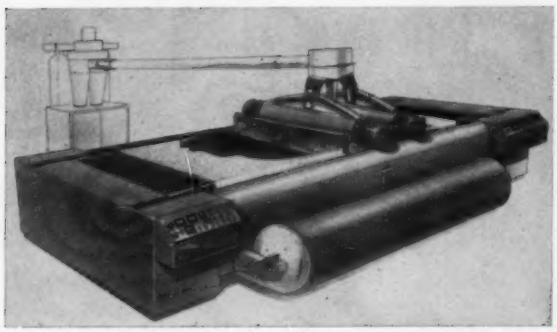
NOPCO
CHEMICAL COMPANY

60 Park Place, Newark 2, N.J.

Plants: Harrison, N.J. • Richmond, Calif. • Cedartown, Ga. • London, Canada • Boston, Mass. • Chicago, Ill.

NEW PRODUCT PARADE

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Shears carpets faster with less handling

A new shearing machine for loop- and cut-pile carpets up to 18 feet wide, backed or unbacked, shears across the carpet width instead of lengthwise. Called the Cross Shearer, the machine performs both light- and heavy-duty shearing, shearing loops cleanly in one pass; thus, handling costs are reduced, and the finishing operation is completed in less time. Better color definition and appearance of the finished carpet is another advantage provided by the machine.

With two shearing heads, one operating in each direction back and forth across the carpet, the machine can be used for a step-advance, utilizing the 60" heads. Special tensioning devices and a unique vacuum table assembly hold the carpet firmly during the shearing operation without crushing the pile. Face of carpet is kept clean by a heavy exhaust that completely removes all sheared particles.

The shearing heads, which use five helical blades, are easily raised for sharpening of blades without removal from the machine; thus, maintenance cost is less. Depth of cut and cutting speeds are easily adjustable. One or two passes can be made over the carpet surface, depending on finish desired, by setting automatic controls.

Turbo Machine Co., Lansdale, Pa.

Do you want more data? Write ☁ or use card on page 179; list F-101

Loom reed with dent wires set in live rubber

Difficulties in weaving caused by warp yarn with an excessive number of knots, slubs, or large bunches may be overcome by using a loom reed with the dent wires bonded in rubber. Designated the "Rubberset" reed, it is flexible to the extent that it allows a warp yarn to find its own spacing; therefore, use of the reed is recommended only for tightly woven materials having good cover.

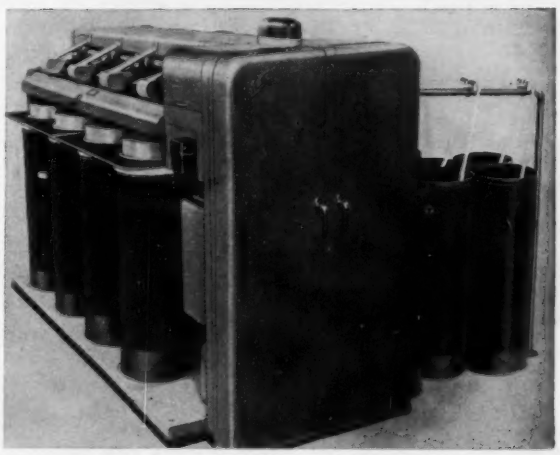
Among benefits to be derived from these reeds are production of more even cloth, fewer warp streaks and reed marks, faster and easier machine drawing-in, lighter weight, longer life.

The dent wires are set in the rubber perfectly spaced and straight. Since they are free to give in either direction and return to their original position, they do not break.

Schmidt Mfg. Co., P. O. Box 560, New Bedford, Mass.

Do you want more data? Write ☁ or use card on page 179; list F-102

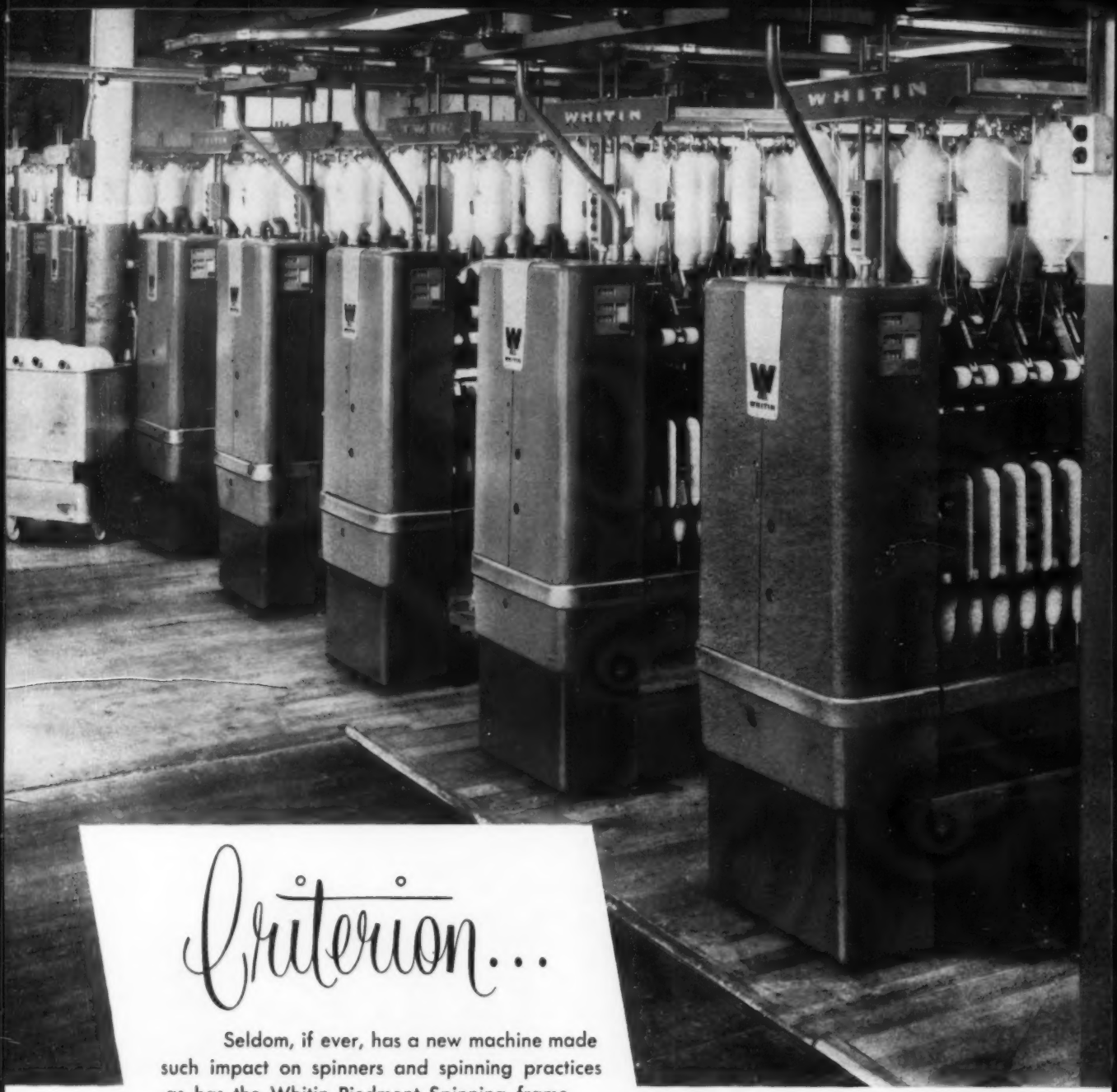
3-over-3 drafting provides versatility, evenness



Production of uniform sliver at speeds up to 330 ft/min, ease of operation, and reduced maintenance are benefits to be derived with the Platt MDF.5 drawing frame.

Various drafting systems are available, based on three lines of bottom rolls, to provide complete flexibility for the different requirements of carded and combed fibers and to permit optimum drafting conditions at all passages of drawing for the full staple range from the shortest cotton up to 2½" man-made fiber. Spring-loaded, over-arm weighting of top rolls is standard.

The pneumatic system of waste removal (an optional feature) includes suction hoods that prevent build-up of



Criterion...

Seldom, if ever, has a new machine made such impact on spinners and spinning practices as has the Whitin Piedmont Spinning frame.

Today, when men who know their spinning get together, you'll find them talking about the Piedmont, using it more and more as a basis of comparison — a new criterion of performance.

And this is a perfectly logical conclusion, too, because the Piedmont is advanced in so many ways. Its production of high quality yarn at increased speeds; its simplicity of operation and maintenance; its sleek floor-saving, five-to-a-bay width — all these and many more cost-saving factors will have special appeal to the man who wants to make his spinning room more profitable.

WHITIN

PIEDMONT

For complete information ask your
WHITIN
representative or write direct to us

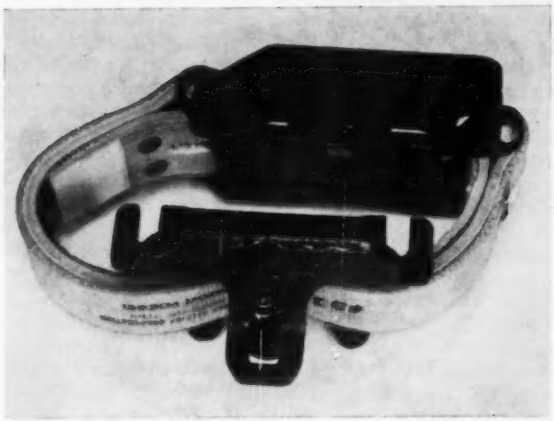
waste at the calender roll trumpets.

Usual electric stop motions are provided: Red warning lamp shows that machine is stopped because of full cans; yellow light that a sliver is broken in creel, creel can is empty, or there is a lap on the electric roll; blue light indicates a lap in the drafting zone, a front sliver break, or calender roll lap.

Atkinson, Haserick & Co., Inc., Box 509, Framingham, Mass.

Do you want more data? Write ◆ or use card on page 179; list F-103

Check strap cuts operating, maintenance costs



A new check strap for looms (X, X-2, XD, XL, S-5, S-6, and others) enables the machines to be operated at higher speeds and provides better boxing with less power. The free-pivoting action of the strap, called the "Nu-check," prevents "Monday morning" start-up problems and breakage. Longer life is another advantage—there are no holes to wear out.

Available in an all-leather model and in a leather-fabric combination model, the strap utilizes fine hair leather. A single wrench is all that is needed to attach the simple strap to the loom.

Slip-Not Belting Corp., Kingsport, Tenn.

Do you want more data? Write ◆ or use card on page 179; list F-104

Data processor for smaller mills uses records

The RCA 301 electronic data processing system is a compact, general purpose unit for the medium size or smaller business. Use of it enables textile manufacturers with as few as 300 employees to compete with large mills in providing extra services, economies, and efficiencies that data processing affords.

A special feature of the system is that it uses magnetic discs, similar to 45 rpm records, for its "memory storehouse." The memory hookup can include five "juke box" disc file units, each holding five million characters. Discs are convenient to handle and store, and they can be erased and used many times. Magnetic tape on reels can also be used with the system.

Designed on the building block concept so that the user can begin with only basic output-input equipment, storage devices, and main control, this system is fully transistorized to provide a saving in electric power and air conditioning requirements. Compatability and flexibility are other advantages.

Units of the RCA 301 system are: (1) modularized basic processor (the electronic control unit), (2) the disc file, (3) tape stations—up to 12 tape memory units can be included, each capable of storing nearly 4 million data characters, (4) high speed printer which turns out its data report at the rate of 72,000 characters per minute.

Introduced at the same time was the RCA 601 which is capable of handling the paperwork load of the largest corporation. In one second, this system can make up to 666,667 "decisions" or it can add 183,000 eleven-digit figures.

Radio Corporation of America, Electronic Data Processing Div., 30 Rockefeller Plaza, New York 20, N. Y.

Do you want more data? Write ◆ or use card on page 179; list F-105

Portable moisture meter "reads 'em all"

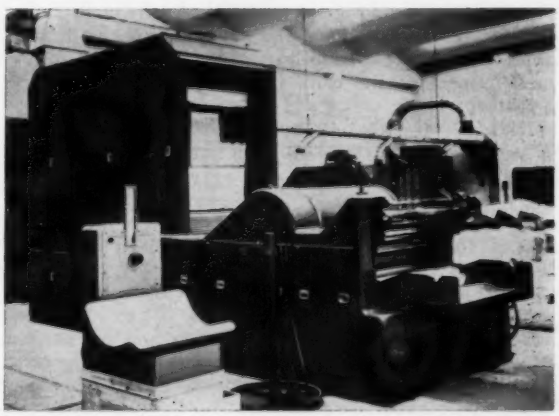
The M-200 portable Moisture Monitor is designed to give immediate readings of moisture in textile fibers and blends without the aid of bone dry tests, correlation charts, or special settings. Three easily selected operating positions on the front panel cover every important application from warps and fabrics to raw stock, moving or standing, natural or synthetic.

A "per-cent regain" reading is obtained by simply applying the detector roll to the material, single fiber or blend, at virtually any stage.

Strandberg Engineering Laboratories, Inc., 225 Summit Ave., Greensboro, N. C.

Do you want more data? Write ◆ or use card on page 179; list F-106

Picker runs continuously, doffs automatically



The Trutzschler single-process picker for the efficient opening and cleaning of cotton and man-made fiber continuously produces laps up to 250 ft long and weighing

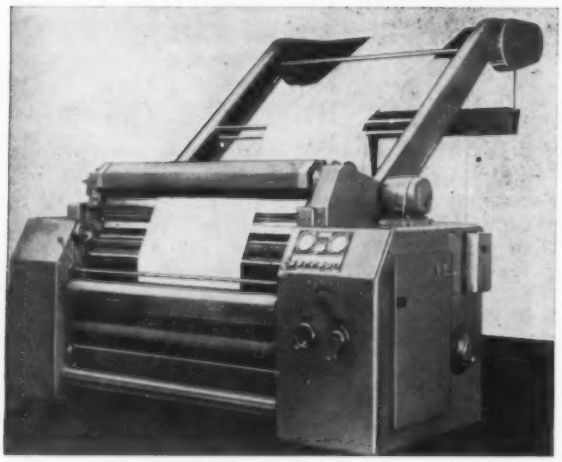
up to 66 lb. Automatic lap doffing, high pressure calender section with pneumatic loading, and totally enclosed design are construction features.

Two models are available. The Model SMVA consists of a hopper feeder, one beater and cage section, and the lap forming machine. The Model DSMVA is equipped with two beater and cage sections, the first provided with a three-blade or porcupine type beater and the second with a Kirschner or a full spiked beater.

Ernest L. Frankl Associates, 515 Madison Ave., New York 22, N. Y.

Do you want more data? Write ◂ or use card on page 179; list F-107

Shears high pile fabrics more accurately, faster



Design of a new shearing machine for high pile fabrics is such that there is no vibration. Consequently, more accurate shearing is provided—length of pile yarns or fibers is uniform and a smooth pile is produced. High production is another advantage.

The cutting elements (revolver and knife) are fastened securely to the main frame of the machine, while the cloth rest is movable. All cutting parts are easily accessible and readily interchangeable. A seam jumper operates automatically.

Height of cut is determined by micrometer adjustment. An indicator on the cloth tension control allows complete reproduction of settings at any time. As the cloth moves through the shear, raising and laying brushes with variable speed and reverse motor may be used. Visual measurement of the cloth in yards per minute is also a feature.

David Gessner Co., 41 Fremont St., Worcester 3, Mass.

Do you want more data? Write ◂ or use card on page 179; list F-108

Compact dryer features air-suspension of fabrics

Material passing through the new "Proctor Float Dryer" is air-supported, being carried and guided without rollers, belts, or other mechanical conveying devices. Maximum drying is obtained, in a more compact housing, without excessive tension and with absolute freedom from marring and wrinkling.

The dryer may be used as a finishing pre-dryer, an intermediate dryer, a shrink dryer after bleaching, dyeing, and printing, and as a special dryer for velvets, plushes, and heavily coated fabrics.

Proctor & Schwartz, Inc., 7th St. & Tabor Rd., Philadelphia 20, Pa.

Do you want more data? Write ◂ or use card on page 179; list F-109

Twister made for high-speed operations

The Pacemaker Model P3 ring twister is capable of operating at exceedingly high speeds, a fact of particular importance to mills producing low-twist continuous filament synthetic yarns. Available in gauges from 5" to 7", inclusive, to accommodate rings from 3½" to 5½" in diameter, it is designed with provision for 11" traverse or possibly longer, depending on the package size to be produced.

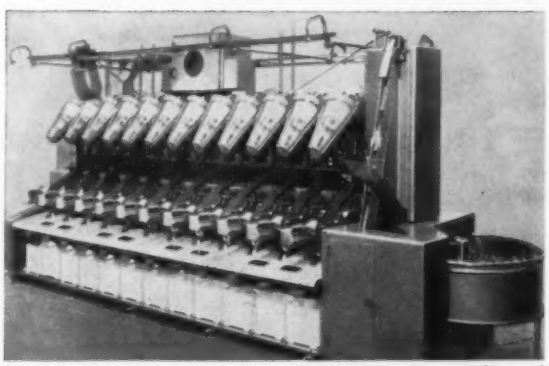
Gears for driving feed rolls and camshaft for the builder motion are housed in a head-end enclosure equipped with full-length swinging doors to facilitate easy approach to the twist change gear. All gears are mounted on antifriction bearings, and quiet operation is secured by meshing metal gears with bakelite gears. The machine is designed to receive various types of builder motions, among them the G3 and the P1.

Delivery rolls are so positioned that the yarn travels an almost vertical path from the roll to the center line of the spindle. Each boss of the delivery roll is made of aluminum onto which is pressed a hardened steel, chromium-plated shell. These bosses are mounted on heavy-duty shafts running in grease-packed antifriction bearings. The delivery rolls will operate at speeds up to 800 rpm, and they may be bought in oversize 4" diameters, 3" bosses being standard. Spindles are driven in groups of four, with 90° of tape contact taking place on each spindle.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ◂ or use card on page 179; list F-110

Automatic filling winder features flexibility



The Schweiter Super Automatic Filling Winder, Type MSL, with dust removing device, rotor for tailless pirns, parallel pirn depositing device, and new guarding of the automatic feeding device for empty pirns.

The Schweiter Automatic Filling Winder is most flexible as it winds any yarn on any type of bobbin up to 10⅛" long. Every spindle or winding unit is completely independent from the other, permitting a different yarn to be wound simultaneously on each—for instance, on a 12-spindle machine 12 different kinds of yarn can be wound at the same time. Regardless of the tension set-

ting and the type of yarn, the bobbins produced are all uniform in diameter.

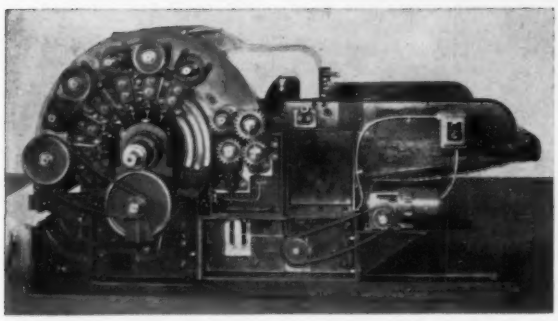
Filling yarn to be used on box loading looms may be wound in such a way that a bunch is formed at the tip of the bobbin, a unique feature in that the yarn is locked through the winding itself.

Optional equipment available with the machine includes: Dust removing device—each cone and yarn tension is enclosed in transparent cover and a suction device works continuously and individually to remove dust, lint, and fly; rotor for tailless bobbins; and parallel bobbin depositing device.

H. J. Theiler Corp., Ashmont Ave., Whitinsville, Mass.

Do you want more data? Write ◂ or use card on page 179; list F-111

Wool system opener offers flexibility



Different degrees of stock opening to meet the particular requirements of various woolen system mills is an outstanding advantage of the new Davis & Furber Fiber Blending Opener. This flexibility is a result of the principle of unit construction employed.

Other benefits to be derived by using this machine are: (1) The T-slot arches used in the main cylinder frame permit a wide arrangement and adjustment of workers (and strippers, if used); (2) lags which run the length of the cylinder and have pins mounted in a wooden base can be easily unbolted at any time and replaced by lags with pins of a different size; (3) positive chain and sprocket drives permit an inexpensive means of changing speeds by changing sprockets (variable speed units can be added if desired).

Some additional construction features are: (a) Hinged cover on cylinder can be opened for cleaning, etc.; electric interlock shuts off all power so machine cannot be started while cover is open; (b) feed table can be racked back on track, away from cylinder, for cleaning both units; (c) feed table includes aprons and rolls operated by separate motor; (d) one-shot lubrication system feeds apron and roll bearings.

Davis & Furber Machine Co., North Andover, Mass.

Do you want more data? Write ◂ or use card on page 179; list F-112

North light from flip of a switch

A lighting system duplicating natural north light and called Verilux is a combination of specially designed and colored fluorescent tubes blended inside the luminary. By varying the type of fluorescent tubes, faithful reproductions of daylight, ranging from the typical cold, bright-day northern light to a more warm, overcast northern light are obtained. It introduces 11 colors of the

traveler!

National-Sterling engineers will help you select the right traveler for your particular spinning or twisting operation. From tests made in your own mill, they will recommend the traveler which meets your requirements efficiently and economically — that will consistently deliver more pounds of first class yarn . . . at higher spindle speeds . . . with fewer ends down.

Whether you're running cottons, wools, synthetics or blends, it will pay to have an experienced National-Sterling engineer suggest the *right* traveler for your needs. Write, wire or phone National Ring Traveler Company and Sterling Division, 000 Pine Street, Pawtucket, R. I.; Southern Office and Warehouse: P. O. Box 293, Gaffney, South Carolina.

NATIONAL Sterling
RING TRAVELERS

F. L. CHASE, JR., Pres. & Treas. L. E. TAYLOR, Southern Mgr.
FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES
There's a NATIONAL man nearby!

H. B. ASKEW, P. O. Box 424, Griffin, Ga., Tel. GRiffin 7647
T. H. BALLARD, 112 N. Ninth St., Belmont, N. C., Tel. YAlmedge 5-2436
F. S. BEACHAM, P. O. Box 511, Honea Path, S. C., Tel. EMerson 9-7302
C. L. FITTS, 2014 Whitman Rd., Greensboro, N. C., Tel. BRoadway 4-0450
J. T. GREENLAW, Glen Haven Circle, Saco, Maine, Tel. ATlantic 4-6298

Export Agent: A. M. ROMERO CORP., 350 Fifth Avenue, New York 1, N. Y.

visible spectrum in their true values, and it is recommended for cotton grading, mixing, dyeing, matching, bleaching, printing, shading, etc.

The fixture may be hung on chains or wires, flush-mounted to the ceiling, suspended on stems, hung vertically, inserted in ceiling apertures or recessed in color-matching and inspection cabinets.

Texplant Corp., 695 Summer St., Stamford, Conn.

Do you want more data? Write ◂ or use card on page 179; list F-113

Card attachment ups production, quality

Among the advantages listed for the Daiwa carding attachment, which is a perforated hollow suction roll equipped with wire teeth and mounted between the licker-in and the cylinder, are: (1) a 50% to 100% increase in production; (2) a 400% increase in cleaning efficiency—less recoverable fiber, more actual trash removed; (3) a 30% to 40% reduction in nep count; (4) an improvement in sliver evenness of from 10% to 15%; (5) improvement in yarn quality; and (6) permits using lower quality cotton.

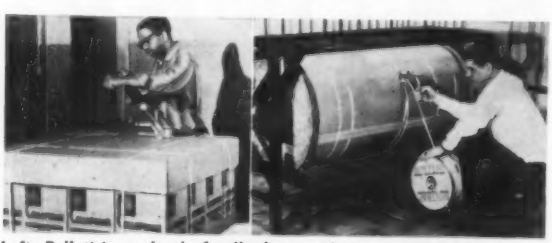
By pulling air through the perforated roller, short fiber is drawn through it while trash drops underneath. The licker-in speed is increased considerably.

Edward S. Rudnick, Representatives, Olympia Bldg., New Bedford, Mass.

Do you want more data? Write ◂ or use card on page 179; list F-114

Rayon cord strapping cuts packaging costs

Economy, ease of handling, and safety are foremost advantages of Avistrap Cord Strapping which is made of high tenacity rayon cord and has ample strength for many industrial packaging applications. Because of the light weight of the new strapping, shipping costs are reduced. A 1000-yd spool of the material is 13½" in diameter, 6" wide, and weighs 21 lb; spools are disposable.



Left: Palletizing a load of cellophane with Avistrap Cord Strapping. Operative is using the sealer and heavy duty windlass tensioner having cutter and unlimited takeup. Right: Tensioning the new strapping on a section beam of yarn with the light duty windlass type pusher bar tensioner with cutter and unlimited takeup.

Other benefits to be derived by using the rayon cord strapping are: (1) there is no danger of cut hands or other accidents in packaging operations; (2) as the product may be readily burned, disposal of used strapping is simplified; (3) when properly tensioned, it cannot harm cartons or merchandise; (4) it will not rust; (5) it may be clearly and attractively imprinted with company or product name; (6) downtime on packaging lines is reduced because fewer changes of strapping are needed and the light spools may be quickly mounted.

Equipment available for applying the new strapping includes stationary, portable, and hanging dispensers; a light duty tensioner (Model AVP-2); a palletizing tool (Model AVT-2); and the Model AVS Sealer.

Industrial Packaging Dept., American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

Do you want more data? Write ◂ or use card on page 179; list F-115

Fibers and yarns

A new continuous ribbon-like yarn, "Rovana" saran micro-tape, offers the following advantages: exceptional covering power for production of tough, lightweight, and economical fabrics; fabrics made with the yarn have three to four times greater resistance to tear; ease of embossing; mildewproof; fire-resistant and self-extinguishing; resistant to solvents and chemicals; odorless; low moisture absorption. Available in ready-to-weave form, the yarn comes in 300, 400, and 550 denier sizes and a broad range of solution-dyed colors, including natural. Applications include draperies, auto and furniture upholstery, tobacco shade cloth, book binding fabric, wall covering, braid, etc.

Textile Fibers Dept., The Dow Chemical Co., Williamsburg, Va.

Do you want more data? Write supplier or use card on page 179; list F-201

Greater firmness and bulk in fabrics are provided by the self-bonding properties of "Avlin" staple fiber, a multicellular rayon fiber now in limited commercial production. The unique cross section and cellular structure cause the fiber to cling to itself in a tight bond and entwine other fibers in the blend, thus creating the firmness and bulk mentioned. This same characteristic gives a unique, crisp, dry hand and touch in fabrics. The unusual shape of the fiber produces light-reflecting surfaces that contribute sparkle and glitter to fabrics, and only a small percentage of the fiber is required in a blend to obtain the effect.

Fibers Div., American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

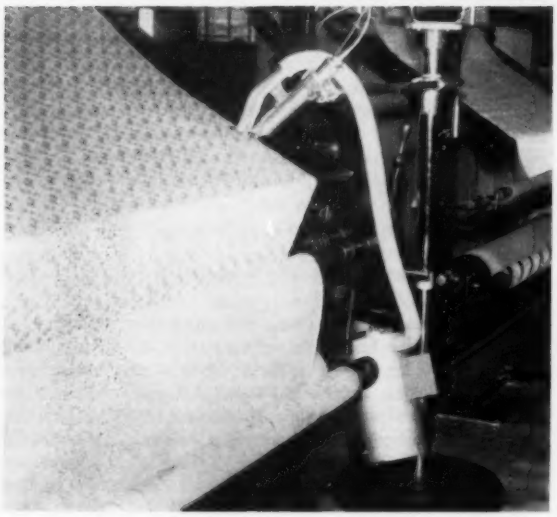
Do you want more data? Write supplier or use card on page 179; list F-202

"Prolene" polypropylene fiber and tow, now being produced commercially on a limited basis, have these characteristics: light weight, high strength, good resistance to abrasion, unaffected by water and common chemicals. The light weight will enable greater coverage, pound for pound, than other synthetic fibers and will allow for more economical manufacture of many products. Now offered in two, three, and six denier sizes, Prolene is used in filter cloths, cordage, and tarpaulins.

Industrial Rayon Corp., 500 Fifth Ave., New York 36, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-203

Trims selvages at speeds up to 100 ypm



Compact size, light weight, and operating speeds up to 100 ypm are advantages provided by a new selvage trimmer for cutting fabric loops and loose threads. Called the Tek-Matic selvage trimmer, it works efficiently on all types of yarns, including nylon and metallic, with no danger of pulled threads.

Both single and double units are available, the latter being particularly suitable for cutting loops on box-loom goods. The single model machine can be used for trimming loose yarns which are free from loops.

Clippings are automatically deposited in a container. Adjustments for suction and closeness of cut are simple, and blades and guards are interchangeable for various types of fabrics. Power consumption is low, and maintenance is minimal with no complicated servicing required.

Tek-Matic Sales Co., 1274 Hastings St., West Englewood, N. J.

Do you want more data? Write ◂ or use card on page 179; list F-116

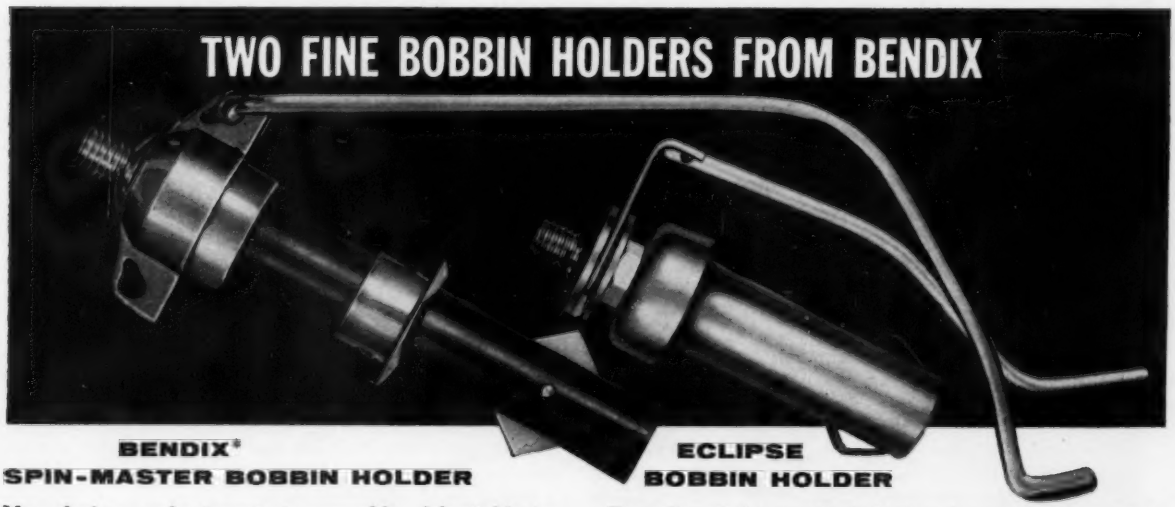
Finishes and chemicals

A new one-step dyeing-resin-finishing process has been announced, in which Procion reactive dyes are applied from a resin finishing bath, thus eliminating the need for a separate dyeing operation. The process follows the normal resin finishing routine: padding, drying, curing, and after-washing.

The principle behind the Procion-resin process, as it is known, is that under acid conditions Procion dyes will react with nitrogen resin precondensates to give a stable chemical linkage. In formulating the Procion-resin bath, however, a special Procion resin catalyst must be added. Commercially available resin precondensates may be used.

It is believed that very little reaction takes place between Procion reactive dye and cellulose since acidic conditions prevail during curing and thus bind the dye

TWO FINE BOBBIN HOLDERS FROM BENDIX



BENDIX®
SPIN-MASTER BOBBIN HOLDER

New design—only 4 parts to assemble. Adaptable to all types of creels, the Bendix Spin-Master is a toggle-type bobbin holder which provides smooth, effortless creeling with every type of creel. Its ⅝-inch body and automatic action permit use in all standard bobbins from 8 x 4 to 14 x 7.

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ECLIPSE
BOBBIN HOLDER

Favorite of the textile industry for many years, this spring-type holder is still available from Bendix-Elmira. Adaptable to all creels, it provides an easy creeling motion and can usually be furnished for two sizes of bobbins (up to total weight of 65 oz.)—8 x 4 and 10 x 5 or 10 x 5 and 12 x 6, for example.

Odell Mill Supply Co., Greensboro, N. C.
North Carolina Virginia

Greenville Textile Supply Co., Greenville, S. C.
South Carolina Georgia
Alabama Tennessee

Export Sales:
Bendix International,
205 E. 42nd Street,
New York City

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to the nitrogen resin precondensate.

Exact curing temperatures depend on the equipment, weight of fabric, the particular resin being used, etc. In general, 300 to 320 F for three minutes, or a higher temperature for a correspondingly shorter time, is suitable for the process. Curing temperatures below about 300 F result in reduced fixation and lower fastness to washing.

The process is said to give dyeings that are markedly superior in fixation and color value to those obtained by any established methods. At present, the process is undergoing plant trials.

Arnold, Hoffman & Co., Inc., 55 Canal St., Providence 1, R. I.

Do you want more data? Write supplier or use card on page 179; list F-204

A new, extra-durable binder for printing and coating with metallic powders is recommended for glass, cotton, and synthetic fabrics. The product, Morpatex 50, is an emulsion in which water is the continuous phase, based on thermoplastic and elastomeric polymers. It features durability, especially resistance to laundering and dry cleaning, and imparts a soft hand to the fabric. It offers good luster, no discoloration on aging, and nontarnishing of the metallic powders by perspiration.

Morningstar-Paisley, Inc., 630 W. 51st St., New York 19, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-205

A highly concentrated, nonionic softening agent that is pure white in color is now available. It is compatible with all types of finishes, resins, catalysts, and fixatives. Crestosoft AS Conc. has no effect on shade of dyed goods, and does not retain chlorine. Used with resins, it minimizes tensile and tear strength loss, increases abrasion resistance, and improves sewability.

Crest Chemical Corp., 225 Emmet St., Newark, N. J.

Do you want more data? Write supplier or use card on page 179; list F-270

Polyurethane may be laminated to fabric with a latex adhesive that is noninflammable, waterproof, resistant to solvents, and which makes possible the manufacture of insulated clothing that can be washed and drycleaned. Self-vulcanizing, Fabrex is film-forming, machines well, may be applied by roller coating equipment or spot glued, and requires no solvent thinning.

Adhesive Products Corporation, 1660 Boone Ave., New York 60, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-206

Eliminates problems caused by static electricity. A new antistatic agent for use on nylon, acetate, Dacron, Orlon, and other hydrophobic fibers is highly effective for the elimination of static build-up. Fabrics treated with Crestex Antistat B have a better appearance and hand, resist lint and dust soiling, do not shock, and do not cling to persons wearing garments made of them. The product is an amber colored, viscous liquid readily soluble in cold water, stable to storage, and neutral in pH. It can be used to treat dyed fabrics with no change of shade or white fabrics with no yellowing and is compatible with nearly all types of finishes.

Crest Chemical Corp., 225 Emmet St., Newark, N. J.

Do you want more data? Write supplier or use card on page 179; list F-207

A carrier for dyeing polyester and triacetate fibers is called Levegal D. It features quick dispersibility, simplification of dyeing procedures, uniform exhaustion in combination shades, practically no effect on shade, superior penetration, no effect on light fastness, improved crocking, wash, and sublimation fastness, and is nonyellowing.

Verona Dyestuffs, Springfield Road, Union, N. J.

Do you want more data? Write supplier or use card on page 179; list F-208

Two new sequestrants for scouring and bleaching cotton fabrics form stable chelates with iron, manganese, and copper, even in the presence of strong oxidizing agents. Perma Kleer 95 is recommended for use in alkaline scouring operations; while Perma Kleer 312 is designed for use directly in the bleach solution.

Refined Products Co., 624 Schuyler Ave., Lyndhurst, N. J.

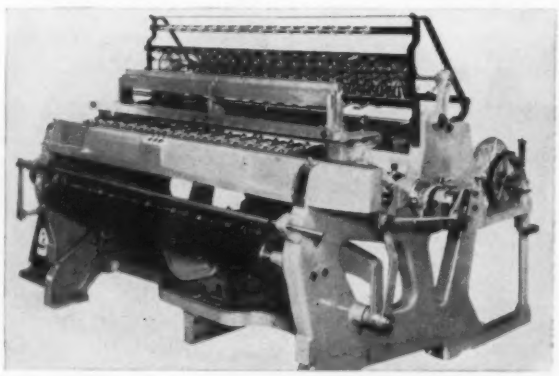
Do you want more data? Write supplier or use card on page 179; list F-209

A new room-temperature curing adhesive based on urethane rubber has high resistance to oils and solvents and forms strong elastic bonds with a number of materials, including synthetic fabrics. Extensive use is expected for bonding urethane sponge and urethane rubber where resistance to washing and dry cleaning is required. The adhesive, Bostik 7070, is essentially colorless and has no residual odor, with excellent resistance to heat and cold.

B.B. Chemical Co., 784 Memorial Dr., Cambridge, Mass.

Do you want more data? Write supplier or use card on page 179; list F-210

Needle loom makes 16 zipper tapes simultaneously



High production of zipper tape and similar fabrics up to 1" wide is provided by the Texnovo "Ultratex" 16/25 shuttleless loom which consists of 16 needle weaving units that put in a double pick with each revolution of the loom by means of a thread arm. The filling thread locks with endless catch thread on the left of each weaving unit to make a knitted selvage. Running at a speed of 800 rpm, the loom produces a total of 26,000 single picks a minute on all of the 16 heads.

Since the filling supply is continuous and warp and filling stop motions are provided, operation of the loom is automatic. One female operative can tend 10 of the looms, with the result that a considerable reduction in labor cost is realized. Floor space required per weaving unit is much less than that needed for conventional single- and dual-head needle looms.

This same loom is manufactured with a special device that permits weaving of fabrics up to 1½ inches wide. It is especially recommended for production of elastic webbings.

Snedeker & Co., Inc., Ansonia, Conn.

Do you want more data? Write ◂ or use card on page 179; list F-117

Equipment briefs

"Potted" limit switches that exclude all liquids and foreign materials are available. They are prewired, and conduit entrances are then sealed with epoxy resin. All Square D Type AW (small precision) and Type T (heavy duty) limit switches can be furnished in the new design.

Square D Co., 4041 N. Richards St., Milwaukee 12, Wis.

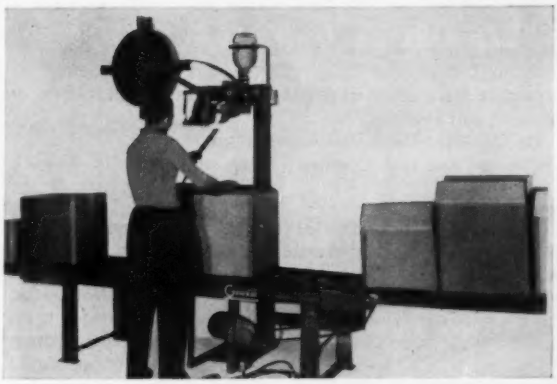
Do you want more data? Write supplier or use card on page 179; list F-211

Warper creel yarn holder accepts many kinds of packages. A new and stronger swing arm assembly for McBride creels will accept a wide variety of package sizes with minimum need for special adapters. The bowed spring spindle is suitable for parallel tubes, bobbins, etc. For medium size packages and cones, a holder snaps into position over the spindle. A holder is also available for those packages with large inside diameter. Adapters feature the quick change design for instant placement or removal, to reduce changeover time loss.

Edward J. McBride Co., Inc., Cottman Ave., & Wissinoming St., Philadelphia 35, Pa.

Do you want more data? Write supplier or use card on page 179; list F-212

Self-measuring tape dispenser-conveyor for case sealing. Each box automatically causes a measured piece of moistened gummed tape to be dispensed, ready to hand-seal the carton. As different carton sizes roll onto this "General" self-measuring tape dispenser-conveyor, it automatically delivers an exact length of moistened tape, including end-overlaps, for hand-application by the operator. Regardless of the case length, the proper length



of tape for the case is automatically dispensed. By the simple touch of a switch, the sealed case is conveyed away, and the next open flap case is conveyed to the operator's station, while at the same time, a measured length of moistened tape is automatically dispensed for hand-application.

General Corrugated Machinery Co., Inc., Palisades Park, N. J.

Do you want more data? Write supplier or use card on page 179; list F-213

Pillow block permits easy bushing replacement. Bronze precision liners can be replaced quickly and easily in new pillow blocks which are recommended for applications where shock loads, elevated temperatures, and corrosive conditions exist. It is not necessary to remove the bottom half of the housing from its sup-

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port. Rotation of liner with shaft is prevented by brass retainer spool recessed between cap and base of housing. Semisteel housings have tongue and groove joints in four-bolt base sizes and fitted bolts in smaller sizes to prevent cap shifting.

Dodge Mfg. Corp., Mishawaka, Ind.

Do you want more data? Write supplier or use card on page 179; list F-214

Simplifies lubrication of single, hard-to-reach gears. Now available for lubrication of single gears where inaccessibility presents a danger to maintenance personnel is a versatile spray system which is dependable because of the simplicity with which it operates. With a hand grease gun attached to a conveniently located fitting, lubricant will be sprayed by the compressed-air-operated spray control valve onto the gear as long as pumping is continued.

Farval Div., Eaton Mfg. Co., 3300 E. 80th St., Cleveland 4, Ohio.

Do you want more data? Write supplier or use card on page 179; list F-215

Fan-cooled worm gear speed reducers recently announced are smaller and offer low output speeds with ample capacity for heavy loads, assuring smooth, quiet transmission of power with minimum maintenance. These right-angle drives which adapt compact, high speed motors to textile and other machinery can operate at high input speeds and cover the range from fractional to large horsepower motors as required. Automatic lubrication is provided by a splash system, except on the low speed shaft where grease fittings are installed.

Link-Belt Co., Prudential Plaza, Chicago 1, Ill.

Do you want more data? Write supplier or use card on page 179; list F-216

For flow and liquid level meter applications that do not require recording or transmission, a bellows meter with a 6" indicating dial is available. Typical of uses for which the mercury-less meter is designed are those for indicating steam, air, gas, and water volume of industrial processes and side streams or cuts from fractionating towers.

Brown Instruments Div., Minneapolis-Honeywell Regulator Co., Philadelphia 44, Pa.

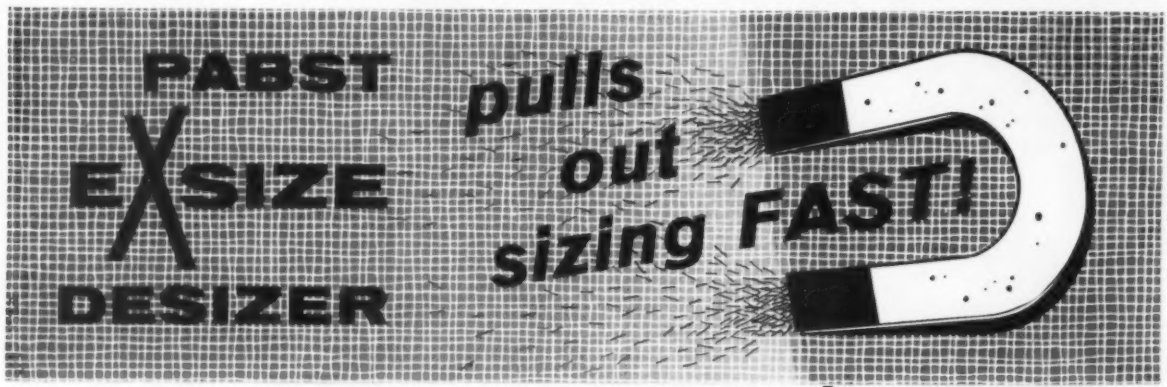
Do you want more data? Write supplier or use card on page 179; list F-217

Picker stick performs better, lasts longer. Improved performance and much longer life are benefits to be derived from a compressed hickory picker stick recently placed on the market. Because of a new compression process utilized in making the item, the grain structure is changed and specific gravity increased; consequently, a tougher, though still resilient, picker stick is produced.

Southern Shuttle Div., Steel Heddle Mfg. Co., Greenville, S. C.

Do you want more data? Write supplier or use card on page 179; list F-218

Ductless dehumidifier. A new dehumidification system is very economical to install and operate as no duct work is required. The unit provides the dehumidification needed during the summer months in maintaining required atmospheric conditions for certain textile manu-



Pabst Exsize takes the starch out of cotton fabrics in a hurry! That's because its built-in heat stability makes Exsize work especially well in high-speed desizing ranges. It's uniform too. Every lot is carefully controlled for uniform enzyme activity and always gives you the same safe, speedy action. Order Exsize soon for the best finishing you've ever had.

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facturing processes. It is custom built to comply with the requirements of the individual mill.

Air-Perme-Ator Mfg. Co., 300 Preakness Ave., Paterson 2, N. J.

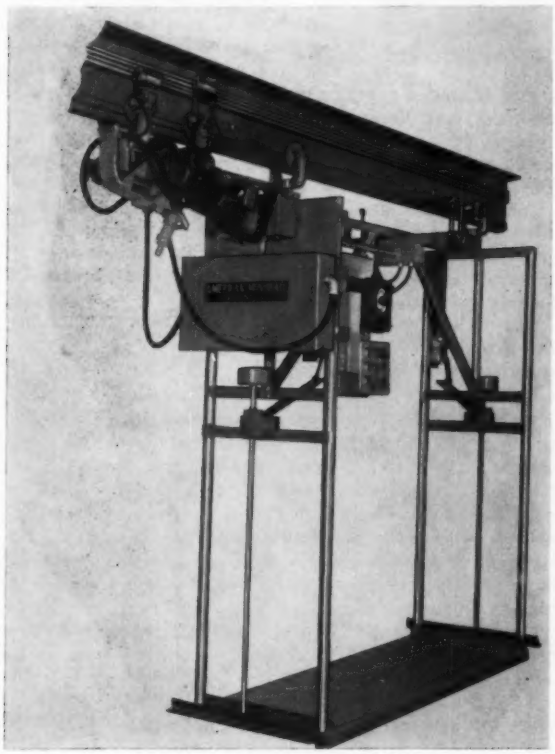
Do you want more data? Write supplier or use card on page 179; list F-219

Glass-lined tank for bulk starch systems. A new Permaglas bulk materials modular storage bin with glass-fused-steel interior surface is designed for storage of bulk materials, such as starch, that can be highly fluidized by aeration. Entire floor area, consisting of aeration media, is inclined 12½° toward the discharge opening. Ease of cleaning is another feature.

A. O. Smith Corp., Harvestore Products, Kankakee, Ill.

Do you want more data? Write supplier or use card on page 179; list F-220

Automatic materials handling is possible in many situations by use of a unit initially designed for transferring sliver cans between carding and spinning. It can be set up to travel automatically to any one of eight stations, stop for loading, and then reset to return automatically to the home station. The unit also can be operated manually from push buttons on the control panel, and the carrier can be stopped anywhere in the system by placing an obstruction in its path so that bumpers on each end acutate limit switches.



The American MonoRail Co., 1111 East 200th St., Cleveland 17, Ohio.

Do you want more data? Write supplier or use card on page 179; list F-221

Safe and maintenance-free gate valves. The combination of three design elements—union bonnet, reinforced body, and cylindrical body neck section—makes a new series of bronze gate valves particularly safe and maintenance-free. Especially suitable for all applications in the 125 to 150 psi steam-pressure range, the valves have a chamfered opening inside the top of the body to provide more working room for positioning the discs

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4. Electric Daylight is reproducable from location to location, plant to plant.	4. Reproducability possible but extremely improbable.
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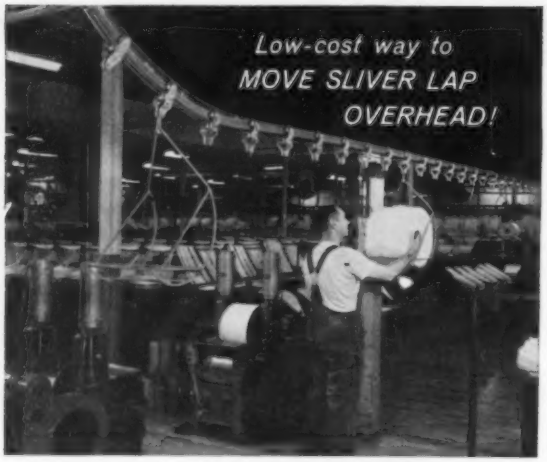

AMERICAN "Cable-Way" CONVEYORS

Sliver lap move from drawing frames to combers on this overhead "Cable-Way" conveyor. Empty spools return on the same conveyor. No floor trucks needed to transport or store lap. Lap move continuously by the combers, instantly available. The "Cable-Way" conveyor is low-cost, easy to clean and service. Write for Catalog CD-B.

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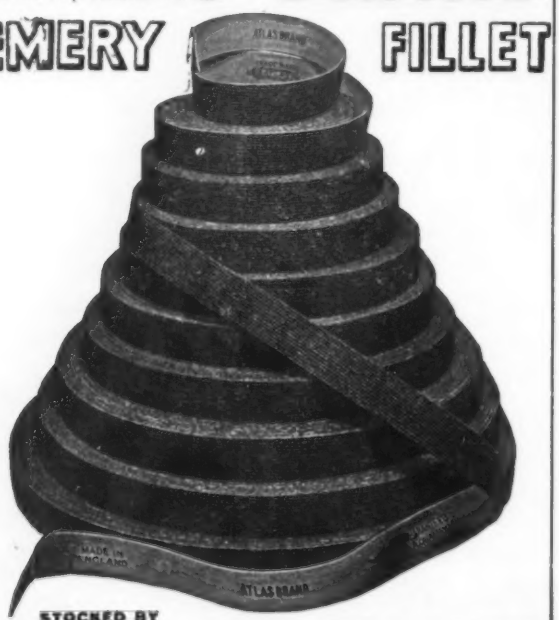

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on the guide when assembling the valve. Three types available: double wedge disc and rising stem (Fig. 3125); solid wedge disc and rising stem (Fig. 3127); and single wedge disc and non-rising stem (Fig. 3129).

The Lunkenheimer Co., Beeckman St. & Waverly Ave., Cincinnati 14, Ohio.

Do you want more data? Write supplier or use card on page 179; list F-222

Faster and more accurate weighing of small amounts of material is provided by the three members of a line of general purpose, ruggedly constructed, easy-to-operate precision balances. Weight readings are indicated with a sharp, shadow-edge light projection on a large, direct-reading, illuminated dial. Utilizing the principle of weight by substitution, the Series "K" balances provide high accuracies which are obtained by positioning the built-in mechanical weights on the beam by simply dialing the desired weight. Fast-acting, magnetic damping device speeds weighing. Weighing pan, available in a variety of stainless steel and plastic designs, is located on top, but provision is made for weighing samples on commodity pans suspended below the balance to permit weight determinations in heating or drying ovens, etc. Built-in taring device can be supplied for deducting weight of empty containers; tare is quickly controlled with knob on side of instrument. Capacities: 800, 2000, and 4000 grams. Dials reading in pounds and grains are available.

The Exact Weight Scale Co., 541 E. Town St., Columbus 15, Ohio.

Do you want more data? Write supplier or use card on page 179; list F-223

An improved, all-synthetic transmission belting, double-strength and almost 100 per cent free of stretch, is made of nylon cloth, nylon bands, and is given a high coefficient of friction by a layer of urethane on the pulley side. Revo, as the belting is called, can be cemented into endless belts at the plant level or purchased as such, and its great strength permits it use in thin elements running at very high speeds around small diameters. It has a high resistance to oils, many acids, will run indefinitely without idlers, and will accept a maximum temperature of approximately 200 F. Available as drive belts or as conveyor belts.

L. H. Shingle Co., Camden 3, N. J.

Do you want more data? Write supplier or use card on page 179; list F-224

A storage rack made of standard steel shelving components for handling extra-long items is useful for storing tubes, rugs, carpets, bolts of cloth, rods, etc. Available in a wide range of dimensions, it is offered in either angle-type shelving to be bolted together or in T-Line shelving using a quick-fastening channel clip instead of nuts and bolts. Skilled labor is not required to assemble and install, and it may be obtained in gray or green baked enamel colors.

Alan Wood Steel Co., Penco Division, Oaks, Pa.

Do you want more data? Write supplier or use card on page 179; list F-225

A one-stop medicine station called the Medi-Prep is an easy-to-clean stainless-steel unit (either 48" or 60" wide by 20" deep by 80" high) containing a four-cubic-foot refrigerator, sink, water faucet, work counter, easy-to-

see tiered shelves, and a double-lock narcotic cabinet. Suited for small or large industrial plants.

General Scientific Equipment Co., Limekiln Pike and Williams Ave., Philadelphia 50, Pa.

Do you want more data? Write supplier or use card on page 179; list F-226

Safe wool grease extracting can be carried out in the laboratory without the special vapor exhaust systems recommended for handling carbon tetrachloride by using Freon-TF, a solvent relatively free from inhalation toxicity.

E. I. du Pont de Nemours & Co., Inc., Dyes and Chemicals Div., Wilmington 98, Del.

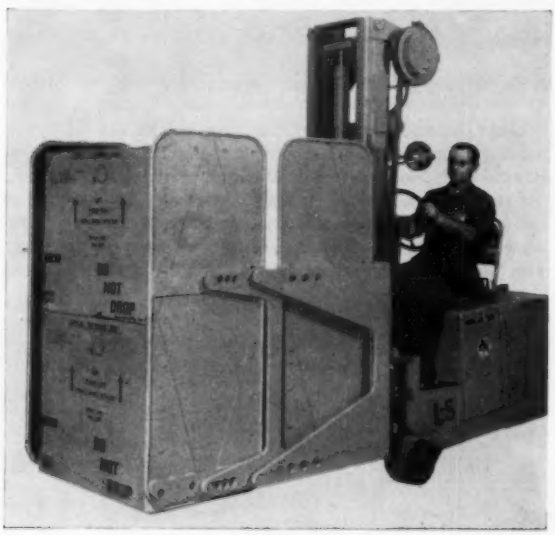
Do you want more data? Write supplier or use card on page 179; list F-227

Air-line filters, Series 30 BE, that remove all the liquid present in compressed air over the full range of air-flow capacity of the air line, are designed for quick and easy cleaning. Available with either metal bowls (Series 30 BE-N) for high-pressure applications or with transparent plastic bowls for pipe sizes of ¼", 3/8", and ½". Additionally, four optional and interchangeable filter elements—for trapping grit, pipe scale, rust, etc.—are offered.

C. A. Norgren Co., 3400 S. Elati St., Englewood, Colo.

Do you want more data? Write supplier or use card on page 179; list F-228

A carton clamp attachment with a load side shift for use with L-S electric trucks insures equal distribution of clamping pressures over the entire contact area (high



friction plates reduce clamping pressures to a minimum) so that even the most fragile containers are readily handled without damage.

Lewis-Shepard Products, Inc., 125 Walnut St., Watertown 72, Mass.

Do you want more data? Write supplier or use card on page 179; list F-229

Compound repairs anything, anywhere. A new epoxy-polyamide chemical compound, Plastic Mastic, is economical to use in repairing floors, walls, ceilings, driveways, curbs, masonry, machinery, fixtures, tanks, pipes, plumbing, and for filling leaks, breaks, holes, and cracks. It is permanently effective with concrete, metals, wood, ceramics, glass, rubber, cloth, paper products, and most plastics. Non-flammable and containing no solvents, the Plastic Mastic General Repair Kit consists of two cans of equal size; one can contains the white base, the other

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the black hardener. Chemical reaction of the two causes hardening of product. Speed of reaction depends on temperature and amount mixed.

Williamson Adhesives, Inc., 8220 Kimball Ave., Skokie, Ill.

Do you want more data? Write supplier or use card on page 179; list F-230

A 4,000-lb capacity rider-walkie lift truck is an electrically operated unit to facilitate handling and stacking of heavier loads in intermittent duty cycle operations. Provides maximum mechanical efficiency and faster tilting for faster duty cycle operations. Stability is excellent.

Yale Materials Handling Div., The Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Do you want more data? Write supplier or use card on page 179; list F-231

An epoxy floor that is resistant to most acids, alkalis, and solvents can be used to resurface worn industrial floors where speed is essential. A topping, approximately 1/8" to 3/16" in thickness, it is applied to a previously prepared base slab, usually concrete, and it can be made skid proof.

Kalman Floor Company, 110 East 42nd St., New York 17, N. Y.

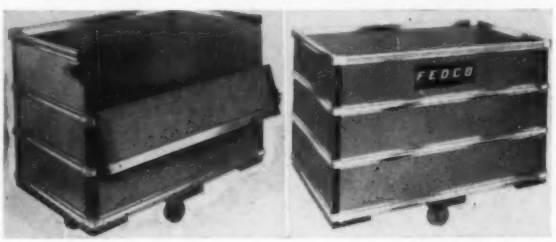
Do you want more data? Write supplier or use card on page 179; list F-232

A portable meter gives values within 0.02 pH and may be used wherever a 115-volt outlet is available. The Model 700 features a single operating control and a truly large scale to facilitate easy and accurate reading.

Analytical Measurements, Inc., 585 Main St., Chatham, N. J.

Do you want more data? Write supplier or use card on page 179; list F-233

Light, strong, maneuverable box trucks for materials handling in plant, stockroom, warehouse, etc., are constructed of hard, vulcanized fiber, finished inside and out with clear, water-resistant varnish, are devoid of rough edges that snag and tear, and are fitted with hardware and railings finished to combat corrosion and rust. The Series 100 (closed model) is standard and has a load



capacity of 1200 pounds; other variations in size and design (open side, drop side, etc.) are available, constructed to specifications. Also available is a complete array of tote and mill boxes for stacking and nesting.

Federal Fiber Corporation, 3704 Tenth St., Long Island City 1, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-234

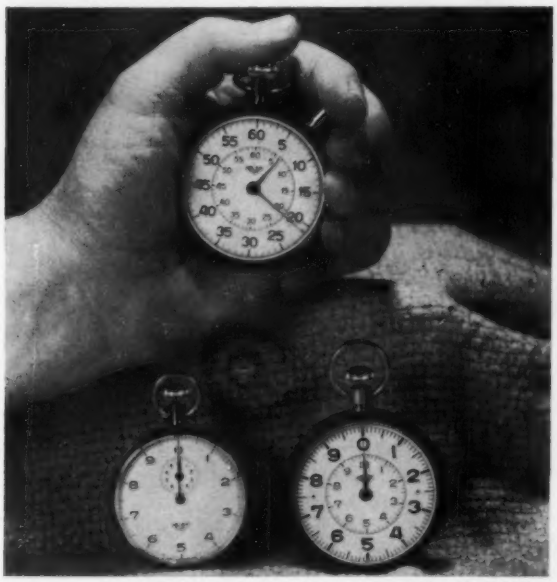
Fast-acting motor overload protection is provided by Thermo-Tector, a feature available on all Tri-Clad 55, three-phase induction motors up to 125 hp, frame sizes 254U to 445U, in any insulation class or enclosure. Switches buried in the stator windings, connected in series with conventional motor control, shut off the motor whenever internal winding temperature exceeds a predetermined amount regardless of rate of temperature rise—under rapid rise the switches "anticipate" and open the circuit

at a lower temperature than when the rise is slow.

General Electric Co., Schenectady 5, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-235

Stopwatch capacity and legibility have been doubled by design changes that permit registering the minutes on a large red circle around the central shaft, rather than on the conventional tiny, off-center circle with a stub hand. An entire 60 minutes of elapsed time may now



The upper timer illustrates doubled capacity with its 60 minutes, rather than 30, in the register dial. In the bottom timers conventional styling is represented to the left and the newer styling to the right. Otherwise these two are identical, 1/10-second timers.

be registered (see top watch in photo) rather than the usual 30 minutes. Both the dial and its lettering are 85 per cent to 100 per cent larger than heretofore.

Heuer Timer Corporation, 441 Lexington Ave., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-236

A narrow aisle electric lift truck with a single drive wheel and offset caster is designed for applications requiring fast lifting speeds and continuous operation while handling loads up to 4,000 lb as high as 20 ft. Separate motor furnishes power for the hydraulic circuit controlling the "reach fork" mechanism, and special attachments such as clamps, tilting, forks, etc., may be used.

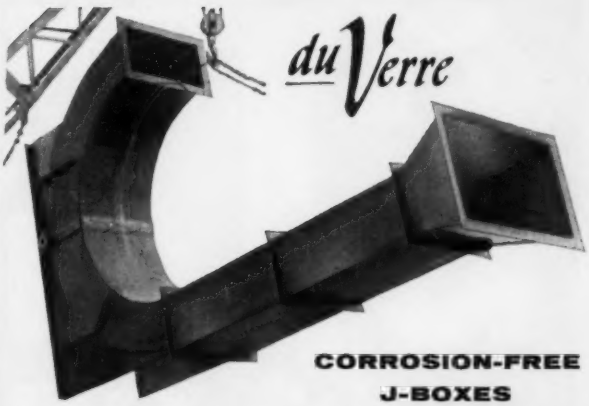
The Raymond Corp., Greene, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-237

Automatically applies labels to poly-bagged goods. Labels are placed on polyethylene or cellophane packages right on the conveyor line by the new Amscomatic 300 Label Applicator which may be used on most conveyorized packaging lines. Affixes perforated edge, pressure sensitive tags or labels which formerly required hand application. Activated by an electric eye, the machine assures positive application of a single label per package for as many as 144 packages a minute. It may be integrated with printing units for packaging line application of preprinted prices, sizes, codes, or other information.

Amsco Packaging Machinery Co., 31-31 48th Ave., Long Island City 1, N. Y.

Do you want more data? Write supplier or use card on page 179; list F-238



CORROSION-FREE J-BOXES

INSURE CONTAMINATION-FREE GOODS

Every day, more textile men are discovering the many advantages of Ju Verre construction. J-Boxes, made from self-supporting resin bonded fiberglass, are **completely** corrosion-resistant—inside and out.

Corrosion-free **inside** means the textile finisher enjoys continuous production of contamination-free, trouble-free goods. Corrosion-free **outside** means du Verre J-Boxes never need painting. They're virtually maintenance-free.

du Verre construction is rugged and durable. Lightweight, it permits quick, easy, low-cost installation.

du Verre offers many other products for the textile industry, including tanks, hoods, vats, fans. For complete facts on du Verre corrosion-free J-Boxes and other products designed to your specifications — write Today for Bulletin No. 100.

du Verre inc.

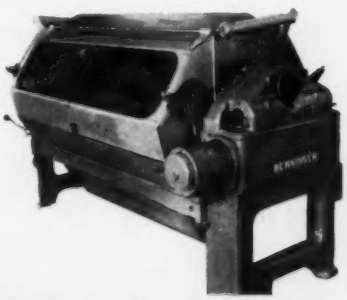
du Verre, Incorporated
Box 37-H • Arcade, N. Y.

WHITINSVILLE, MASS.

H.J. THEILER CORPORATION

SPARTANBURG, S. C.

Benninger Eng. Co., Ltd.	Sectional Warper and Beamer
Loepfe Bros., Ltd.	Optical Electronic Feeler
Ruti Machinery Works, Ltd.	Looms, Sizing Machy.
Schweiter, Ltd.	Winding Machinery
Staubli Bros., & Co., Ltd.	Dobby Heads



BENNINGER AUTOMATIC DYE JIGS

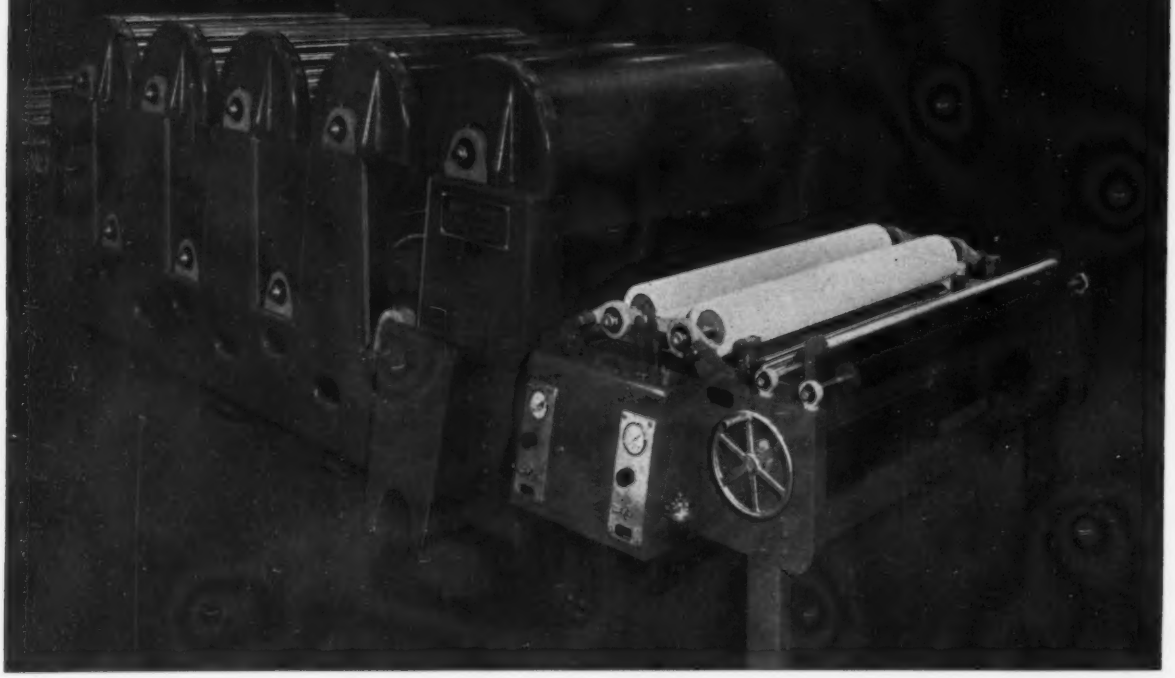
TOP PERFORMANCE — FIRST IN LINE

PLEASE REQUEST COMPLETE INFORMATION

SIZE

heavy warps
medium warps
light warps

with ONE BOX...



West Point Foundry's extremely versatile high-capacity size box is handling light, medium and heavy warps as required by the increasing demands of modern high speed slashing. A wide range of warps—6100 ends of 14's to 2400 ends of 40's—from canvas to print cloth is now being slashed in this new size box.

Double immersion rolls allow greater access of size to the warp. Rubber-covered pneumatically-operated squeeze rolls and insulated stainless steel vat are standard equipment. Rugged construction throughout and easy-to-clean design are consistent with West Point's high standard of manufacturing.

West Point Foundry makes the PACESETTER *Multi-Cylinder Slasher. Since its introduction in late 1958, more than 130 West Point* PACESETTER *Slashers have been purchased by value-conscious textile leaders.*

WEST POINT *Foundry & Machine Company*

WEST POINT, GEORGIA

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Instead of writing a dozen different manufacturers for free literature and more information on equipment, supplies, or services, just insert in the appropriate space provided on one of these postage-free cards the key numbers of the items in which you are interested, and drop the card in the nearest mail box. Use the cards also to get details on any advertisement—just insert the name of the company and page number in the space provided.

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FIRST CLASS PERMIT NO. 582, SEC. 34.9, P. L. & R., ATLANTA, GA.

Textile Industries

806 PEACHTREE ST., N. E.

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FREE BOOKLETS

6-1 PRINTWEIGH SCALES. Advantages and uses of scales that automatically print weight data are described in four page folder. Toledo Scale Corporation, Toledo 12, Ohio.

6-2 STABILIZERS FOR CAUSTIC. Booklet describes stabilizers for use in caustic alkaline peroxide bleach baths, including properties, uses, and fields of application. Putnam Chemical Corporation, Beacon, New York.

6-3 CONDITIONING OVENS. Series of data sheets describe complete line of textile conditioning ovens, including photographs and dimensions. Emerson Apparatus Company, 171 Termont St., Melrose 76, Mass.

6-4 SELECT-A-SPEDE DRIVE. Bulletin describes the operation and performance of Electronic Select-A-Spede Drives from 3/4 HP to 4 HP. Louis Allis Company, 427 E. Stewart St., Milwaukee 1, Wisconsin.

6-5 CRESLAN. Technical data bulletin describes the physical properties and performance qualities of Creslan acrylic fiber. American Cyanamid Co., Fibers Division, 111 West 40th Street, New York 18, New York.

6-6 MOTOR APPLICATION. 16 page bulletin outlines motor characteristics and includes up-to-date information on design. Century Electric Co., 1806 Pine St., St. Louis 3, Mo.

6-7 INDUSTRIAL AIR CONDITIONING. Booklet presents four key check-figures for determining whether factory air conditioning will be a profitable investment. Carrier Corporation, Syracuse, New York.

6-8 LIFT TRUCK SAFETY. Plant safety kit is aimed at making materials handling operations safer and more efficient through correct operating procedures. Towmotor Corporation, 1226 East 152nd Street, Cleveland 10, Ohio.

6-9 FIBER FEEDS. Booklet describes fiber feeds, including application data and method of operation. Proctor & Schwartz, Inc., 7th St. & Tabor Rd., Philadelphia 20, Pa.

6-10 KOFILM STARCHES. Manual is designed to assist both technical and non-technical personnel in the application of Kofilm starches for warp sizing and other textile applications. Starch Division, National Starch and Chemical Corporation, 750 Third Ave., New York 17, N.Y.

6-11 WOOL CARD. Booklet describes the Whitin Model M Wool Card including photographs, construction details, and application. Whitin Machine Works, Whitinsville, Mass.

6-12 SPEED REDUCERS. 66 page publication describes "Worm Gear Speed Reducers", available in horsepower ratings up to 150. Link-Belt Company, Dept PR, Prudential Plaza, Chicago 1, Illinois.

6-13 AUTOMATIC COOKER. Bulletin describes High-Solids Jet Cooker, a continuous automatic cooking system designed for high-solids finishing preparations. A. E. Staley Manufacturing Company, Decatur, Illinois.

6-14 BULK STORAGE. Bulletin contains specifications on Permaglas Bulk Storage Structures which make possible automatic systems for storing and conveying bulk starch. A. O. Smith Corporation, Harvestore Products Division, Kankakee, Illinois.

6-15 REDUCING MOIRE IN BEAM DYED TRICOT. A method for wrapping beam cores to prevent moire in nylon tricot dyed to deep shades at high temperatures. Bulletin N-126. Textile Fibers Department, E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

6-16 POWDERED POLYETHYLENE. 8 page booklet explains in detail how polyethylene in powdered form can be applied to the textile field. Technical Literature Department, U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corp., 99 Park Avenue, New York 16, N. Y.

6-17 CHROMIUM CHEMICALS. Technical bulletin presents the properties and principal uses of chromium chemicals, including graphs, charts, etc. Solvay Advertising Section, 61 Broadway, New York 6, New York.

6-18 DECORATIVE SPRAY. Booklet describes how unusual decorative effects may be obtained by spraying cloth with vinyl plastic. Flexible Products Company, P. O. Box 306, Marietta, Georgia.

6-19 MATERIALS HANDLING DEVELOPMENTS. Booklet describes engineering developments of special trucks for special problems in the textile mills. Fisher Manufacturing Co., Box 350, Hartwell, Ga.

6-20 WARP SIZING PRODUCTS. Bulletin discusses briefly the range of Ahco products for warp sizing. Bulletin 2004. Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.

6-21 PSYCHROMETRIC CHART. Expanded psychrometric chart now includes curves to 350° F dry bulb temperature. J. O. Ross Engineering, Div. Midland-Ross Corp., 730 Third Avenue, New York 17, New York.

BOOKLETS

raw stock to roving

T-101 **LUMMUS PEPPER - SHAKER OPENER.** Gives complete details and photographs. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-102 **STATIC ELIMINATION.** How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

T-103 **CARD GRINDING INFORMATION.** Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

T-105 **VERSA - MATIC DRAWING FRAME.** Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

T-106 **SARGENT OPENER.** Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-107 **FEATHERTOUCH DRAFTING.** How to get "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

T-110 **BOBBINS.** Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fibre Co., Wilmington, Del.

T-111 **MAGNETIC IDEAS.** Booklet shows uses of permanent magnetic separation equipment in opening room as well as throughout mill. Removes tramp iron, prevents fires. Eriez Mfg. Co., Erie, Pa.

T-112 **ADVANTAGES OF ALDRICH PICKERS.** Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-113 **NEW CONDENSER TAPE.** Describes Supr-O-Tape, an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-119 **FIBER METER.** Automatic weighing and blending assures quality, holds variation to 1%. James Hunter, Inc., P. O. Box 298, Mauldin, S. C.

T-120 **PIN DRAFTERS.** Textile job report No. 21 tells how Warner & Swasey Pin Drafters help modify jute systems for carpet yarns. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

T-121 **UNIVERSAL CARD COILER.** Literature describes both head and base swivel for adjustment. Includes data on 90-day free trial. McDonough Power Equipment, Inc., McDonough, Ga.

T-122 **RECONDITION OPENING & CLEANING.** Bulletin gives whys and wherefores of reconditioning your opening and cleaning lines. Special attention given to each machine with suggestions as to parts replacement. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-123 **COILER CONVERSIONS.** Full facts on low initial cost conversion to larger coiler cans. Lists advantages, has complete description. Southern States Equipment Corp., Hampton, Ga.

T-124 **CARD DRIVE.** Bulletin 301-a describes simple, safe, efficient individual card drive. Southern States Equipment Corp., Hampton, Ga.

T-132 **PROCTOR SUPER PICKER.** Data sheet gives details of the Proctor Super Picker for use on slabs of baled cotton, or wool and synthetic blends in layers up to 12" thick. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-133 **ANTI-STATIC AGENT.** Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

yarn and warp making

T-201 **PRODUCTS FOR SPINNING AND WEAVING.** Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

T-202 **NEW BOBBIN MANUAL.** Complete bobbin guide. Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

T-203 **SPINDLE OIL.** "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

T-205 **HIGH SPEED AUTOMATIC QUILLER.** Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

T-208 **PACKAGED SPINNING MODERNIZATION.** Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

T-209 **SECTIONAL WARPER.** Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

T-210 **CONICAL RINGS AND FLYERS.** Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

T-211 **PRECISE WINDING MACHINE.** For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

T-212 **AUTOMATIC CLEANING EQUIPMENT.** Working details and advantages of the Tri-Rail Cleaner. American MonoRail Co., 111 East 200th St., Cleveland 17, Ohio.

T-216 **SPINNING FRAME CONVERSIONS.** Big-package, new-frame results at half the cost. Meadows Mfg. Co., P. O. Box 10676, Station A, Atlanta, Ga.

T-217 **COLLECTO-VAC.** New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

T-219 **SPINNING AND TWISTER RINGS.** Complete details, pictures, price list. Whitinsville Spinning Ring Co., Whitinsville, Mass.

T-222 **SUCTION CLEANING SYSTEM.** Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

T-223 **FACTS ABOUT YOUR FLYERS AND SPINDLES.** Advantages of smooth flyer and spindle operation. Ideal Machine Shops, Bessemer City, N. C.

T-225 **LAPLESS ENDLESS SPINNER.** Full information available. Ton-Tex Corporation, 31 Columbus Ave., Englewood, N. J.

T-227 **SPINDLE OILING MACHINE.** Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

T-228 **HANDY SPINNING REFERENCE.** Shows traveler speeds, sizes of ring flanges. Saco-Lowell Shops, Parts Replacement Division, P. O. Box 327, Greenville, South Carolina.

T-229 **UNIRAIL UPTWISTER.** Higher yarn quality and better packages at faster speeds. Leesona Corp., P. O. Box 1605, Providence, R. I.

T-230 **PRECISION TEXTILE WINDING.** Tensions and density control for winding rubber cones. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-231 **CONE WINDER.** Describes Model 102 winder, including applications. Foster Machine Co., Westfield, Mass.

T-232 **SHORT CUT TO STAPLE FIBER SPINNING.** Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

T-233 **WEAVER'S KNOTTER.** Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

T-234 **TEXTILE ROLL COVERINGS.** Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

T-239 **LARGE PACKAGE TWISTER.** Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 10676, Sta. A, Atlanta, Ga.

T-241 **PACEMAKER TWISTERS.** Folder gives details on high production, outlines notable features. Whitin Machine Works, Whitinsville, Mass.

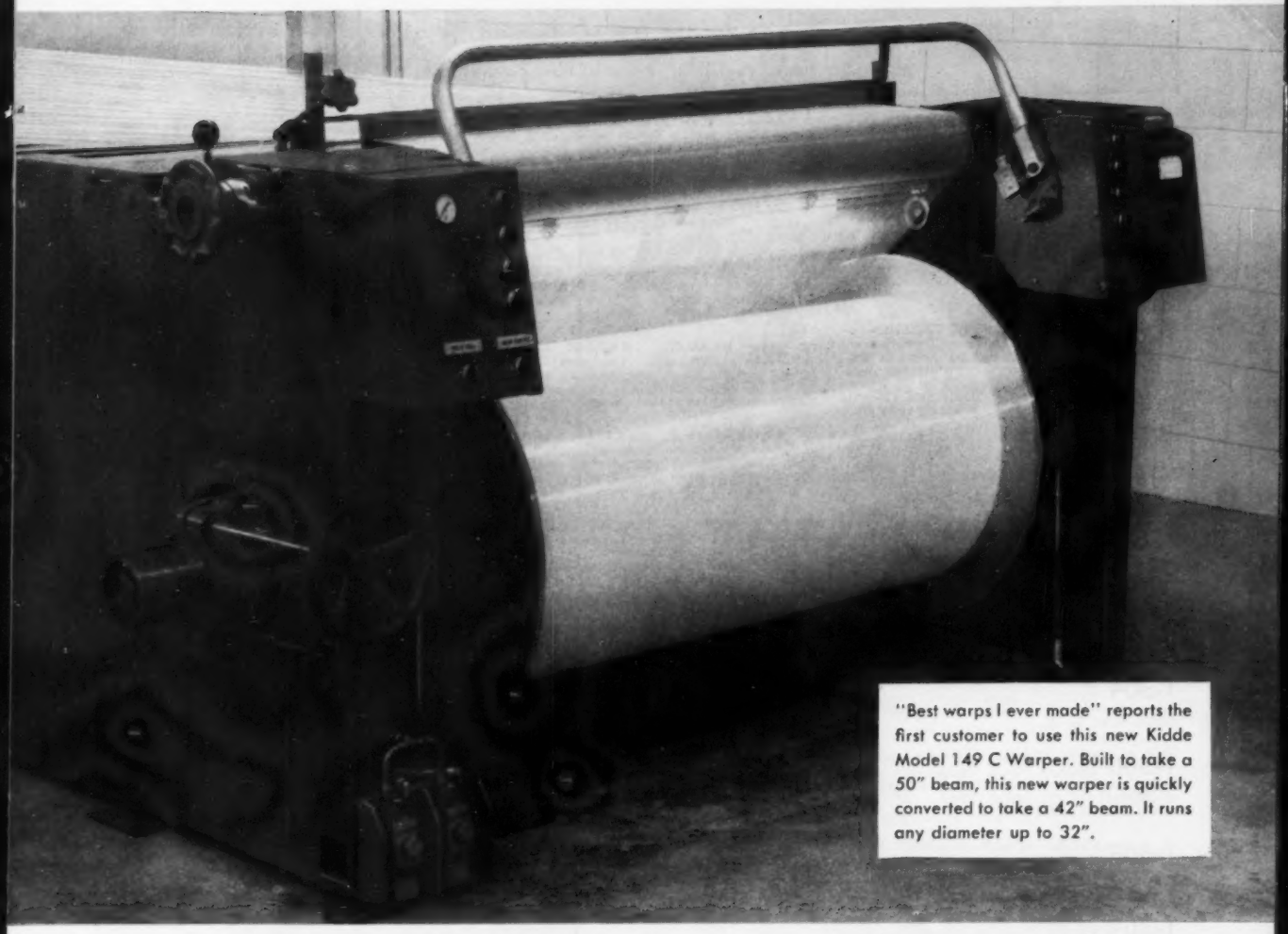
T-242 **RING SPINNING FRAME.** Folder presents description, illustrations and specifications of up-to-date Simplex ring spinning frames. Davis & Furber Machine Co., North Andover, Mass.

T-243 **ANTI-FRICTION TWISTER BEARINGS.** Find out how bearings helped make The Meadows Twister almost friction-free. Fafnir Bearing Company, New Britain, Conn.

T-246 **BETTER BEAMS.** Information on three ways to make better beams. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-249 **VARI-SPEED MOTOR PULLEY.** Describes variable speed control through use of simplified three-major-part disc-assemblies with only one lubrication point. Reeves Pulley Co., Reliance Electric & Engineering Co., Columbus, Ind.

T-250 **SPINNING MODERNIZATION.** Booklet shows how lower costs and improved quality are obtained by spinning modernization. Roberts Company, Sanford, N. C.



"Best warps I ever made" reports the first customer to use this new Kidde Model 149 C Warper. Built to take a 50" beam, this new warper is quickly converted to take a 42" beam. It runs any diameter up to 32".

Every KIDDE WARPER gives you the smoothest, most even warp beams in the business

Kidde warpers are *engineered* to give you smoothness and evenness in yarn buildup that's unmatched by any other machines you can buy. Here are a couple of reasons why:

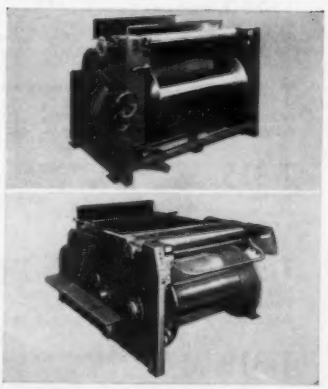
Instead of just one cylinder on the compression roller, Kidde gives you *two* – hydraulically operated – one on either end of the roller, for perfectly balanced pressure that eliminates bounce and chatter. And powerful brakes stop the beam within one revolution and automatically adjust themselves. What's more, the brakes on the measuring roll, compression roller and beam are electronically synchronized so yarn is never scuffed.

When used with a Kidde accumulator, both warper and accumulator are electrically synchronized. This maintains even tension when yarn must be backed off to pick up a lost end.

These are only a few major advantages of Kidde warpers. Get the full story of their trouble-free operation by contacting:

This Kidde warper handles beams up to 21" in diameter, made in three sizes: 21, 42 or 50 inches long. Every part is easily accessible. Regardless of size, any Kidde warper can be doffed automatically – even by a girl. Hydraulics do the work, at the touch of a lever.

Kidde high speed cotton system warper handles 54" section beams with flange diameters up to 36". Has all the quality features of other Kidde warpers with speeds up to 1,000 YPM.



TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

BOOKLETS

T-255 **NEW BOBBIN HOLDER.** Details on streamlined, positive latching bobbin holder. Whitehead Die Casting Co., 1140 Zonolite Rd., Atlanta, Ga.

T-256 **HUMIDIFIER PROTECTION** — Brochure tells how "Rustex" can stop rust and corrosion and prevent discolored water in your humidifying system. Odorless and completely harmless to personnel, or goods. Anderson Chemical Co., Inc., Box 1424, Macon, Georgia.

slashing—weaving—tufting

T-301 **COUNTING AND MEASURING DEVICES.** Wide range of counting devices for all types of textile machinery. Veeder-Root, Inc., Hartford, Conn.

T-302 **LOOM SUPPLIES.** Describes complete line. E. H. Jacobs Northern Division, The Bullard Clark Co., Danielson, Conn.

T-304 **LOOM PRODUCTION CHARTS.** Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

T-306 **THE STORY OF STARCHES.** History and information on manufacture and use of starches. National Starch & Chemical Corp., 750 Third Ave., New York 17, N. Y.

T-308 **STEEL WARP BEAMS.** Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

T-309 **PENFORD GUMS IN TEXTILES.** Describes their excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-312 **AIR SLASHER DRYER.** Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-313 **BUTT-TACKING SEWING MACHINE.** Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

T-314 **LOOM REED BOOKLET.** Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

T-315 **COCKER EQUIPMENT.** Information on warp sizer, beam warper, creels, tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

T-318 **FORMULAS FOR SLASHING ARNEL.** Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

T-319 **ECLIPSE STARCHES FOR TEXTILES.** Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-321 **COCKER SLASHERS.** Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

T-322 **MOUNTS FOR LOOMS.** Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

T-323 **UNIFIL LOOM WINDER.** Describes new concept of filling preparation which needs no quilling area. Leesona Corp., P. O. Box 1605, Providence, R. I.

T-324 **ALIGNING LAYS.** Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

T-325 **TRAVELING LOOM CLEANER.** Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

T-326 **DRAPER REPAIR PARTS CATALOG.** Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

T-327 **BALING PRESSES.** Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

T-328 **TEXTILE MACHINERY PARTS CATALOG.** Describes complete line of Dayco and Thorobred textile parts. Dayton Rubber Co., Dayton, Ohio.

T-329 **COUNTING DEVICES.** Describes complete line of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

T-331 **STATIC BARS.** Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

T-332 **CARE OF DRAPER SHUTTLES.** Describes how longer, trouble-free service may be obtained. Draper Corporation, Hopedale, Mass.

T-336 **ONE-PIECE SIZING AGENT.** Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

T-346 **FACTS ON NON-WOVENS.** Fact file on non-wovens tells of new machinery, new methods of handling fibers, new bonding agents, etc. Curlator Corporation, Textile Div., E. Rochester, N. Y.

T-347 **NEW DRYING SYSTEM.** Describes high capacity, custom engineered drying equipment for tufted plants. Dalton Sheet Metal Co., Inc., Dalton, Ga.

T-351 **AUTOMATIC STOP MOTION.** Complete information available on automatic stop motion for Titan warp tying-in machine. Edda International Corp., 468 Fourth Ave., New York 16, N. Y.

T-353 **BACKING FOR TUFTEDS.** How to get your tufting necessities with one telephone call. Fulton Cotton Mills, P. O. Box 1726, Atlanta 1, Ga.

T-355 **NON-WOVEN FABRICS.** Booklet gives outline of nature and history of non-woven and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-358 **LOOM SUPPLIES.** Information on rod lubricant and applicator, sponge leather bunter, picker. Garland Mfg. Co., 54 Water St., Saco, Me.

T-362 **SIZE THAT SATISFIES.** Information on getting the correct size package for your mill. Also on Bingham line of slasher rolls. Stodghill & Co., 716 Ponce de Leon Place, Atlanta, Georgia.

T-363 **RUBBER COVERED SLASHER ROLLS.** Handy booklet tells how to get longer life and better performance from rubber covered rolls. Includes data on handling, storing and grinding. Stowe-Woodward, Inc., Dept. C, 181 Oak St., Newton Upper Falls 64, Mass.

knitting

T-401 **SINGLEHEAD FULL - FASHIONED MACHINE.** Literature on request from the Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-403 **RASCHEL KNITTER.** Describes new Raschel-type knitting machine. Kidde Textile Machinery Corp., Inc., Farrand St., Bloomfield, N. J.

T-406 **NEEDLE OIL DOES NOT STAIN.** Details on "Guiftex 39" developed for knitting mills. Gulf Oil Corp., Gross & PRR, Pittsburg 30, Pa.

T-407 **KNITTING MACHINES.** Information on Wildman "TFS" 30" single section F-F machines and "AL" 30" diameter 32-feed "single purpose" circular interlock machine (rib type) Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-409 **KNIT GOODS FINISHING MACHINERY.** Data on calenders, shrinkers, curers, extractors, steamers. Tubular Textile Machinery Corp., 33-61 54th St., Woodside, N. Y.

T-410 **"READING" TYPE 60 F-F KNITTING MACHINE.** Information about the new "Reading" Type 60, 38-section automatic full-fashioned hosiery knitting machine. Write Textile Machine Works, Reading, Pa.

wet processing

T-500 **WEBB GUIDE SYSTEMS.** Folio No. EG-84 describes webb guide systems for cloth applications. G.P.E. CONTROLS, INC 240 E. Ontario St. Chicago 11, Ill.

T-501 **TUBES FOR PACKAGE DYEING.** Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

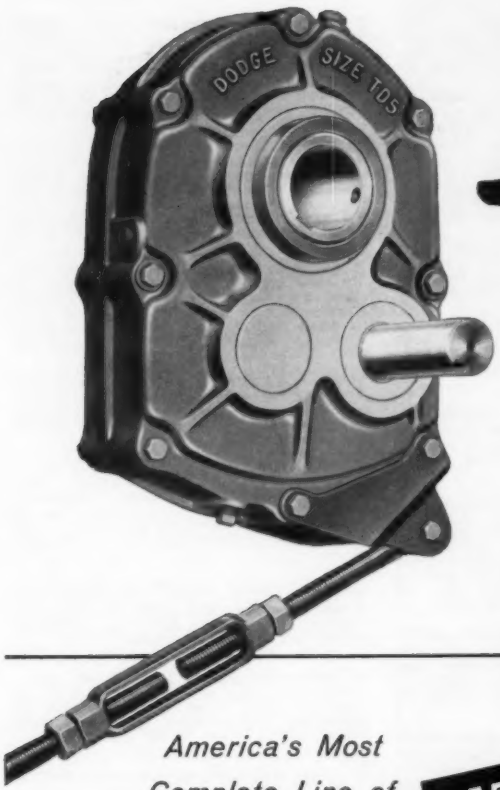
T-502 **FINISHING MACHINERY.** Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

T-503 **WATER ANALYSIS.** Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-504 **UREA FORMALDEHYDE.** Literature on urea formaldehyde or U.F. concentrate-85. Dept. CUF1-29-1, Nitrogen Div., Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-506 **CATIONIC SURFACE ACTIVE AGENT.** Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-507 **CONTINUOUS STARCH COOKER.** Booklet shows how the use of continuous cookers for starch assures accurate control, economy, low maintenance in warp sizing and finishing Clinton Corn Processing Company, Clinton, Iowa.



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BOOKLETS

T-508 PEROXIDE BLEACHING SYSTEM. Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept., Wilmington, Del.

T-510 TEXTILE CHEMICALS. Describes leading products for wet processors. Royce Chemical Co., Carlton Hill, N. J.

T-512 DEPUMA. Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., Porter Bldg., Pittsburgh 19, Pa.

T-513 CATALYST AC-6. Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Springfield 2, Mass.

T-514 SODA ASH BULLETIN. Contains useful data covering this subject. Solvay Sales Division Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-516 ALUMINUM CHELATE PEA-1. Technical data sheet tells how aluminum Chelate PEA-1 may be used with advantage in many applications where aluminum is proplate is unsatisfactory. Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-517 CHEMICAL CATALOG. Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

T-519 HYDRAULIC POWER UNITS. Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

T-522 CUT WATER TREATMENT COSTS. Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

T-526 PRODUCTS FOR TEXTILE IMPROVEMENT. Describes products and services designed to provide better fabrics. B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, Ohio.

T-527 SODIUM HYDROSULFITE. Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

T-528 ETHANOLAMINES. Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-531 ROTARY DYEING MACHINE For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

T-534 DYEING AND FINISHING MACHINERY. Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

T-535 DYEING, BLEACHING AND DRYING EQUIPMENT. Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

T-536 NAPTHOL RATIOS SLIDE CHART. Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

T-540 PENFORD FINISHING GUMS. Complete data, including physical properties. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-541 REGENERATION OF ZEOLITE WATER SOFTENERS. Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

T-542 DYEING SYNTHETIC FIBERS. Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-543 INDUSTRIAL BRUSHES. Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-544 WASTE HEAT RECOVERY. Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

T-545 WASHERS FOR SCOURING, BLEACHING, ACIDIFYING. Describes high capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-546 NAPHTHOL FOR LIGHTFAST BROWNS. Booklet describes new, straight, non-substantive naphthol. Naphthol As-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-547 SOFTENER LUBRICANT, NAPPING AID. Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

T-548 HANDBOOK ON METHOCEL. Gives technical information and use data on family of methylecellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

T-549 WALL CHARTS FOR HANDLING, TESTING H_2O_2. Two 16" x 21" wall charts available, one on handling and the other on testing H_2O_2. Becco Chemical Div., Food Machinery & Chemical Corp., Buffalo 7, N. Y.

T-550 POLYVINYL ACETATE EMULSION. Bulletin contains a description of Celanese emulsions and cites advantages of Celanese polyvinyl acetate emulsions in textile finishing. Celanese Corp. of America, Plastics Div., 744 Broad St., Newark 2, N. J.

T-554 INSTRUMENT CATALOG. Complete information on industrial instrument accessories and supplies. Includes specifications, parts numbers and prices. Catalog 500, Foxboro Co., Foxboro, Mass.

T-556 HUNTER DYEING EQUIPMENT. Describes fully with diagrams Hunter Model A Dye Becks, Hunter No/Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. James Hunter Machine Co., North Adams, Mass.

T-557 HIGH ACTIVITY CATALYST. Technical bulletin describes new catalyst AC-6 which provides increased activity, excellent bath life, minimum odor formation, etc. Monsanto Chemical Co., Plastics Div., Springfield, Mass.

T-558 CATIONIC DYE LEVELER. Bulletin TX-34 gives new information on dye leveler for acid colors on nylon tricot and wool through use of Nopco 1425-B. Nopco Chemical Co., Textile Chemicals Div., Harrison, N. J.

T-559 FLOW CONTROL Complete information on largest selection of values to handle flow control requirements. William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

T-561 PUMP POURABLE PASTES. Bulletin tells how Moyno pumps can pump any textile liquid that can be forced through a pipe, even if highly viscous or corrosive. Robbins & Myers, Inc., Springfield, Ohio.

T-563 POLYETHYLENE FINISHING AGENT. Booklet contains information needed to adopt Emulsifiable A-C polyethylene as a finishing agent to any particular process. Semet-Solvay Petrochemical Div., Allied Chemical Corp., 5th Floor T, Rector Street, New York 6, N. Y.

T-564 HYDROGEN PEROXIDE BLEACHING. Booklet discusses advantages, operating details and savings in chemical costs of Activated Hydrogen Peroxide Bleaching Process for Cotton Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-566 ETHYLEX GUMS. Brochure describes properties of hydroxy ethyl ether derivatives of corn starch. Applications of these noncongealing gums in warp sizing and finishing covered. A. E. Staley Mfg. Co., Box 151 Decatur, Ill.

T-570 CARPET DRYERS. Details, pictures, drawings on driven roll, conveyor, and tenter types. Andrews and Goodrich Div., 336 Adams St., Boston Dorchester, Mass.

T-572 DYEING MACHINERY FOR EVERY PURPOSE. Illustrated literature available on complete line of automatically controlled machinery. Gaston County Dyeing Machine Co., Stanley, N. C.

T-576 YARN PREPARATION. Describes products for yarn preparation, printing, finishing. Polymer Industries, Springdale, Conn.

T-577 STAINLESS DRY CANS. Information on stainless steel, 75 psi, reverse dished, head dry cans. Can be furnished Teflon-coated if desired. Sims Metal Works, West Point, Ga.

T-579 AUTOMATIC GUIDING EQUIPMENT. Catalog shows various types of automatic guiding equipment for accurate cloth guiding. Fife Mfg. Co., Inc., P. O. Box 9815, Oklahoma City, Okla.

fibers and yarns

T-601 FORTISAN-36, NEW TEXTILE FIBER. Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

T-602 CAPROLAN NYLON HEAVY YARNS. Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

T-603 RAYON—MILE BY MILE. Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

T-604 THE CHEMSTRAND NYLON Story. Describes the birth and growth of Chemstrand Nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

T-605 COLOR-FAST FIBERS. Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to color fastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

T-606 "DIAL-A-FIBER" Ingenious circular chart indicates properties and compatabilities of "Uvitex" for application on natural and synthetic fibers. Ciba Co., Inc., Route 208, Fair Lawn. New Jersey.

T-608 TASLAN TEXTURED YARNS. Technical information on dyeing and finishing of new fabrics made with Taslan. E. I. du Pont de Nemours & Co., Wilmington 98, Delaware.

PERSONAL NOTES

(from page 34)

John Campbell, of New York, has been appointed director of public relations for ACMI, with offices in Charlotte, N. C.

Clinton M. Hester has been appointed Washington and general counsel of the National Association of Wool Manufacturers. Mr. Hester succeeds the late Eugene O'Dunne, Jr., as Washington counsel.

Charlie R. Moore has been appointed superintendent of the textile mill, Texas department of corrections, Huntsville, Texas.

Dr. Robert V. V. Nicholls, associate professor of chemistry, McGill University, has been elected president of The Institute of Textile Science. Other officers elected were: vice-president—**Dr. R. D. Bennett** of Du Pont of Canada, Ltd.; treasurer—**F. D. Wallace,** of Domil, Ltd.; secretary—**D. R. Muir,** of Johnson & Johnson, Ltd.

Joseph G. Shedd, vice-president of manufacturing of Fulton Cotton Mills, Atlanta, Ga., has resigned.

Eugene Marks has joined the engineering staff of Callaway Mills Co., LaGrange Ga. • • • **C. B. Mahaffey** has been named superintendent of the Calumet Plant.

Princeton Knitting Mills, Inc., has announced the appointment of **Lenore Friedman** as fashion coordinator.

Robert T. Miller, assistant to the executive vice-president of the Tufted Textile Manufacturers Association, Dalton, Ga., has resigned his position to become editor and publisher of the North Fulton Herald, Roswell, Ga.

George Stead, Jr., has joined the Rhode Island application laboratory of Warwick Chemical division of Sun Chemical Corp. as a textile chemist. Mr. Stead was formerly associated with Mohasco Industries, a division of Mohawk Carpet Co.

Jack Harris has been named assistant director of manufacturing for the new textile division of The Kendall Co.

Carl J. Seifert, Jr., has accepted the position of general manager of the Borg Fabric division of Amphenol-Borg Electronics Corp.

Continued on page 188

James A. Chapman (second from right), president of Inman (S. C.) Mills and president of the American Cotton Manufacturers Institute, is shown with the three textile industry leaders who will become ACMI's officers on October 1. **William H. Ruffin** (left), president of Erwin Mills, Inc., Durham, N. C., will become second vice-president, succeeding **R. Dave Hall** (right), secretary and treasurer of Climax Spinning Co., Belmont, N. C., who will move up to the first vice-presidency. **J. M. Cheatham** (second from left), president of Dundee Mills, Inc., Griffin, Ga., will succeed Mr. Chapman as president of ACMI.

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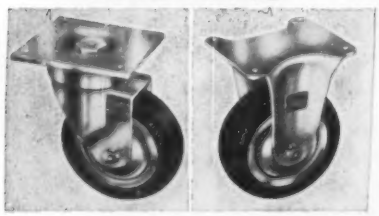

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PERSONAL NOTES

(from page 187)

At the recent annual meeting of the Rhode Island Textile Association, **David Curtis,** vice-president of Kenyon Piece Dye Works, was elected president. Other officers elected were: first vice-president—**Richard F. Cook,** general manager of Darlington Fabrics; second vice-president—**Ivory Littlefield,** manager of Allendale Co.

Frank McNew of J. P. Stevens & Co., Milledgeville, Ga., has been elected chairman of the office executives division of Georgia Textile Manufacturers Association succeeding **H. A. Fuller** of Swift Manufacturing Co., Columbus, Ga.

In the marketing division of American Felt Co., **Thomas J. Gillick, Jr.,** has been appointed to the newly created position of manager of product application and engineering. * * * **Harold Gray Hencken** has been named director of the engineering and research division.

Mr. Gillick

Mr. Hencken

American Felt Co.

Mr. Parks

Mr. Myers

P. H. Haynes Knitting Co.

T. O. Moore has been elected chairman of the board of P. H. Hanes Knitting Co., succeeding **P. Huber Hanes, Sr.,** who has been made honorary chairman. At the same time, **R. A. Lambertson,** senior vice-president and treasurer, was named chairman of the executive committee. * * * **E. J. Parks** has been appointed division purchasing agent and **Roland E. Myers** has assumed duties as assistant superintendent of the yarn manufacturing division.

Mr. Esslinger
M. Lowenstein

Mr. Striegel
Rockford Mills

At the meeting of the Textile Quality Control Association, held in Atlanta, Ga., recently, **William H. Esslinger,** director of quality control for the grey mills of M. Lowenstein & Sons, Inc., was elected president.

James Newby has been named personnel and public relations supervisor for Rockford Textile Mills, Inc., McMinnville, Tenn. **Theodore Striegel** has been promoted to the newly created position of superintendent of the looping and inspection departments.

John J. Smith, president of Chicopee Mfg. Corp., has been named to the board of directors of Johnson & Johnson, New Brunswick, N. J.

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Paul Kincaid, formerly president of Kincaid Cotton Co., has joined Carlton Yarn Mills, Inc., as head of the cotton department.

John E. Williams has assumed the position of vice-president of marketing and **Robert C. Wilkie** has been appointed vice-president and director of research and development of the textile products division of Ludlow Corp.

T. Lynwood Smith, a vice-president, has been senior vice-president of Adams-Millis Corp., High Point, N. C.

G. Amos Hayward, formerly manager of product development for the cotton mills division of The Kendall

Co., has been named manager of textile product planning of Ludlow Mfg. & Sales Co.

Dr. Harold W. Stiegler, director of research for the American Association of Textile Chemists and Colorists, has retired.

John R. Montgomery has assumed duties as chemist in charge of the laboratory of the North Carolina Finishing Co.

Shannon Gamble, formerly associated with Standard-Coosa-Thatcher Co., has accepted the position of secretary of the Combed Yarn Spinners Association, with headquarters in Gastonia, N. C.

Richard Louis Alford has been named manager of Gold-Tex Fabrics, replacing **George Peeler,** who is no longer associated with the company.

A special tribute was paid recently to **P. S. Howe, Jr.,** newly elected chairman of the board of The American Thread Co., Inc., on the occasion of his 65th birthday. **E. B. Shaw** has been named to succeed Mr. Howe as president of the company.

At the 57th annual convention of Phi Psi fraternity held in New York recently, **Graham H. Anthony,** a director of Burlington Mills Corp., was granted honorary membership.

OBITUARIES

John C. Borden, 59, former president of Borden Mills, Kingsport, Tenn.

Basil D. Browder, 61, executive vice-president in charge of manufacturing of Dan River Mills, Danville, Va.

Claude W. Cain, 71, Greensboro manager of the Steel Heddle Mfg. Co.

Ralph F. Culver, 79, formerly associated with Ciba Company, Inc.

William T. Hodges, 70, retired superintendent of Roanoke Mill No. 2 of the J. P. Stevens & Co., Inc.

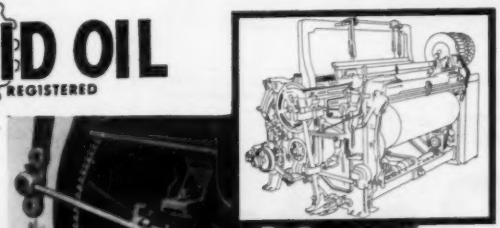
Joseph S. Hubbard, 67, manager of the sales office of Scott & Williams, Inc., Reading, Pa.

Francis W. Poe, Jr., 69, former vice-president of F. W. Poe Manufacturing Co., Greenville, S. C.

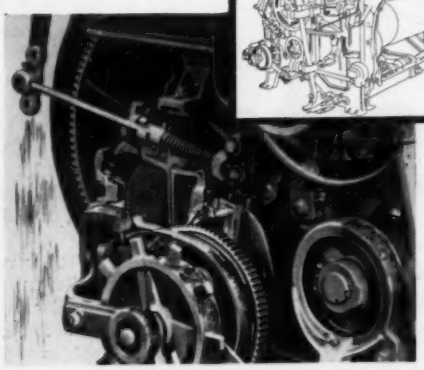
Paul N. Stone, 61, president of Crescent Knitting Mills, Inc., Philadelphia, Pa.

Edward P. Taft, former executive of King Mill, Greenville, S. C.

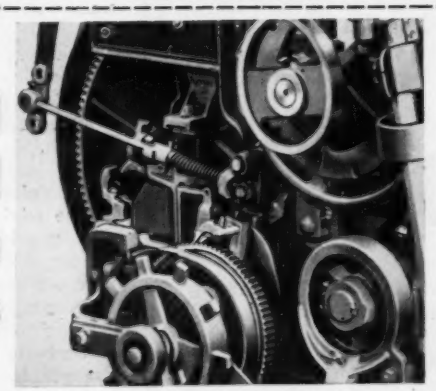
NON-FLUID OIL
TRADE MARK REGISTERED



Ordinary oil drips out, stains cloth, soaks floors



Non-Fluid Oil stays in bearings



Ordinary oils and greases drip and spatter onto wraps, woven goods and floors, causing a higher percentage of seconds, higher lubrication costs and an underfoot hazard. NON-FLUID OIL stays in bearings and lubricates dependably until entirely consumed. Bearings run cool and friction-free. Less lubricant is required, with fewer applications. Production of perfect cloth is increased. Therefore, you save three ways.
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NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

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MILL NOTES

Indian Head Mills, Inc., has announced the acquisition of the **Arnold Print Works** plants in Hartsville, S. C., and Adams, Mass. The two plants will be operated under present management and known as the Aspinook division of the parent firm.

A new firm, **Fabric Repair & Examining Corp.,** for burling, mending, and specking has begun operations at 157 10th St., Passaic N. J. Paul Bartolomeo is president and Alphonso Anastasio is vice-president.

Wauregan Mills, Inc., has purchased Valley Knitting Mills, Pottsville, Pa. The new acquisition will be known as the Vee-Kay Import Co., division of the parent firm.

The new addition to the present building of the Cartersville, Ga., division of **E-Z Mills Corp.** has been completed. Approximately 90 machines will be installed and employment will be increased.

New machinery, valued at $750,000 has been purchased by **Durham (N. C.) Hosiery Mills** as part of the changeover to seamless hosiery production.

The enlargement of the warehouse of the **Dixiana Mills,** Dillion, S. C., will provide additional space for storing finished rolls of carpet. The new addition will include facilities for loading trucks.

Kimberly Mills, Charlotte, N. C., has purchased the Woodlawn plant building and part of the machinery from American & Efird Mills, Inc. The latter firm will transfer the unsold machinery to the Albemarle N. C., plant. No change in personnel is anticipated.

Contracts have been signed for the construction of a 9,000 sq ft addition to the Hawkinsville, Ga., division of **Opelika Mfg. Corp.** When completed, cloth production will be increased by 10,000 lb a week.

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Black . . . always the ultimate in style and practicability. And to be sure you choose the right black for dyeing nylon, silk and wool, specify LOGWOOD blacks. Check these outstanding performance advantages:

★ TRUE BLACK SHADE
★ SUPERIOR FASTNESS OF COLOR
★ ACTUAL WEIGHT INCREASE
★ LOW COST
★ NO HARMFUL EFFECT ON FIBERS
★ SIMPLE METHOD OF DYEING

Veteran chemists and dyers all over the world depend on LOGWOOD when they want the best in black. Available in powder, crystal and liquid forms. Write today for detailed information.

U. S. Distributor
AMERICAN DYEWOOD CO., INC.
374 MAIN ST., BELLEVILLE, N. J.
The West Indies Chemical Works, Ltd.
70 Wall St., New York 5, N. Y.

space has been announced by **Calhoun Mills,** Calhoun Falls, S. C. Equipment needed to balance manufacturing operations on a more efficient basis will be installed.

The **San Quentin (Calif.) Cotton Textile Mill** has announced plans to increase production by 43 per cent and to install 100 additional looms. Production for the year will exceed two million yards.

The P. H. Hanes Knitting Co. recently received the first place award of the Folding Paper Box Association of America for its design of three new baby gift sets.

A $6 million spinning and weaving plant will be constructed in Ninety Six, S. C., by **Greenwood (S. C.) Mills.** The plant will be called the Sloan plant and will employ about 350 people.

A new yarn spinning mill in Lowell, Mass., is producing yarn as

---

For more than a half century the Newberry (S. C.) Concert Band has tootled, sforzanded, and oompahed its musical way across Newberry's history and today is a carefully nurtured part of **Newberry Mills, Inc.** Its ranks are replenished with members who have spent at least a year in special band-sponsored classes, and its financial problems are written off by its sponsors. Thus, with its collective head free to concentrate on Sousa, Goldman, etc., it has marched in every Christmas parade held in Newberry, played for such dignitaries as President Taft and Marshall Foch, and was in the ceremonies that opened the First Textile Exhibition in Greenville. Its present manager, Frank Jones, has been with the band in some capacity since its inception, and he points out that the band is the sole survivor of 18 industrial bands that used to play across South Carolina.

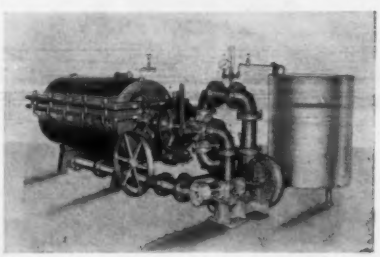
The first photo of the band, made in 1906, shows 19 of the 22 members though not necessarily in the order named: G. G. Swindler; T. B. Franklin; J. G. McCary; O. O. Reighley; L. S. Smith; W. S. Clamp; F. E. Miller; W. H. Bowen; J. J. Davis; W. F. Bouknight; C. O. Bishop; C. N. Hayes; S. L. Jones; J. H. Campson; H. W. Swindler; B. L. Albritton; J. G. Carroll; W. L. Smith; F. K. Jones; M. F. Hardeman; W. A. Wherry, director; and W. H. Hardeman, manager.

Present members include, though also not necessarily named in order: F. K. Jones; Boyd Robertson; Carmen Bouknight; Hugh Turner; Johnnie Shealy; Edward Mills; Harold Leopard; Tom Bouknight; Wayne Dowd; Elmer Long; Ronnie Tiller; Larry Chapman; Harmon Meeks, Herman Leopard; Pope Buford; Tony Franklin; Beverley Dehardt; Clarence Kibler; Christine Rister; Jack Goree; Gail Davis; Willie Johnston; Cecil Leopard; Barr Shealy; Mary Robertson; Linda Sue Rister; Sue Corley; Bonnie Vaughn; and Wesley White.

What method saves you **17%** of steel strapping?

See page 50

HORIZONTAL BEAM DYEING & BLEACHING



The Morton Machine Works Horizontal Beam Dyeing & Bleaching Machine is the finest money can buy. This equipment, plus the services of Morton's skilled engineers make an unbeatable dyehouse combination.

MORTON

MACHINE WORKS, INC.

COLUMBUS, GEORGIA

MILL NOTES

(from page 191)

fine as 15-run. Known as **H. P. Chandler Corp.**, the firm is headed by Howard P. Chandler, and Roland E. Lowies is vice-president in charge of sales.

Weisbach Hosiery Co., Reading, Pa., has ceased operations.

The offices of the personnel department, credit union, cotton buyers and cotton grinding room, shipping, technical, and cost departments, and laboratory of **The Opp-Micolas Cotton Mills** have been moved into the new Administrative and Technological office building, which was purchased recently and has been completely renovated.

K. & P. Hosiery Mill, South Temple, Pa., has ceased operations.

Machinery and supplies of the **Javian Yarn Manufacturing Corp.**, Fall River, Mass., have been purchased by Interstate Textile Equipment Co., Inc., Charlotte, N. C. Liquidation and removal of all equipment has begun.

Plans for additional manufacturing facilities at the Ca-Vel, N. C., plant have been announced by **Collins and Aikman Corp.** W. Basil is general manager.

Rosedale Knitting Co. and **Liberty Dye Works** both located in Reading, Pa., have ceased operations.

Merger of **Fantasy Yarns, Inc.** with **Lorraine Yarn Mills, Inc.**, both of Philadelphia, has been announced. Operations will be consolidated at Lorraine's location within the next year. Abe Ulitsky has been named president of both firms, and Arthur LaPierre has been appointed chairman of the board.

Sterner Hosiery Mills, Shillington, Pa., has gone out of business.

New seamless hosiery machinery has been purchased by **Durham (N. C.) Hosiery Mills** at a cost of $750,000.

Manufacturing operations at **Mary Ann Hosiery Mill,** Sinking Spring, Pa., have been discontinued.

Massachusetts Mohair Plush Co., Inc., has elected Thomas A. Roberts, general manager and sales manager of the Ellenboro (N. C.) mills division, a vice-president.

J. P. Stevens & Co., Inc., recently ran a page ad in several newspapers entitled "The Influence of Uncontrolled Textile Imports on our Economy," a message of importance to Americans concerning an industry essential to our national security and prosperity.

Operations at **Everbest Hosiery Mill,** Oley, Pa., have been discontinued.

Collins & Aikman Corp. has announced acquisition of **Bangor Mills, Inc.,** Pen Argyl, Pa. It is contemplated that operation of the mill will be continued under present management.

The Williamston, S. C., rayon plant of **Amerotron Co.** is being enlarged to accommodate some new equipment and to make room for the consolidation of certain production equipment being transferred from other plants.

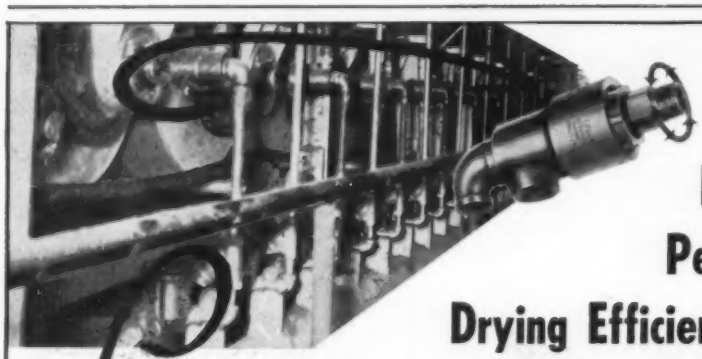
The manufacture of rayon fabrics has begun in the Beavertown, Pa., plant of **Kildare Manufacturing Co.,** New York. Approximately 45 people are employed. Plans call for the installation of 180 looms and increasing employment.

Lockport (N. Y.) Felt Co. has purchased 100 acres of land in Burt, N. Y., for an additional plant. Contracts have been signed for delivery of needle-punching machines valued at $300,000 for the Newfane plant and the new facility.

The new plant facility under construction near Bridgetown, Nova Scotia, for **United Elastic, Ltd.,** is nearing completion.

The new plant of **Caron Spinning Co.,** Rochelle Ill., located in Robesonia, Pa., has begun production of nylon carpet yarn. Richard J. Caron has been named plant manager and John Herrmann is superintendent.

A modern, fireproof building containing 12,000 sq ft of floor space will be constructed to house the newly formed **Shelby (N. C.) Seamless Hosiery Mill, Inc.** Sixty to 100 persons are expected to be employed by the end of the year. Officers of the

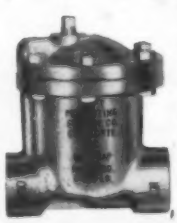


For Peak Drying Efficiency

The combination delivers a steady flow of hot dry steam to all types of textile dry cans. It assures much faster warm-up, requires no adjustments, and materially reduces downtime.

Syphon Type ROTARY UNION* (above)

A self-aligning and self-adjusting precision mechanical seal which maintains a leakproof connection without mechanical maintenance. Unique syphon support prevents loosening, breaking, or falling off of syphon pipe.



Model 70T UNITRAP* (left)

An inexpensive bucket-type steam trap with a universal pressure range from 0 to 125 lbs. and a capacity up to 1000 lbs. per hour. Stainless steel working parts assure long and trouble free service.

Write for Bulletin 700 and 825

*Trade Name - Patented

"WHERE *Good Connections* COUNT"®

PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N.C.

Baltimore—Buffalo—Camden, N. J.—Chicago—Cleveland—Los Angeles
New York—Providence—Montreal—Toronto

Just 4 months away . . .

SHOW WEEK IN GREENVILLE

Southern Textile Exposition

October 3-7—Textile Hall—Greenville, S. C.

FOR RESERVATIONS, write Rooms Secretary, Box 1323, Greenville, S. C.
FOR SHOW NEWS, read "Textile Industries" regularly. Preview October.

firm are: president and treasurer—E. Y. Mauney; vice-president and assistant secretary—George Blanton; secretary—Jack Palmer.

Plans have been announced for adding a new $200 thousand wing to **Drexel (N. C.) Knitting Mills Co.**, a subsidiary of **Morganton (N. C.) Full-Fashioned Hosiery Co.** A more efficient boiler plant will be constructed at the parent firm.

An addition to the seamless hosiery division of **Siler City (N. C.) Manufacturing Co., Inc.**, is being constructed. When completed, it is expected that approximately 200 additional people will be employed.

Dan River Mills, Inc., has purchased **Sayles Biltmore Bleacheries, Inc.**, Biltmore, N. C., a subsidiary of Sayles Finishing Plants, Inc., Saylesville, R. I. Cloth finishing for independent converters will be continued. * * * A silicone water repellent finish for piece dyed fabrics has been announced. Suitable to sports and outerwear, the new finish is said to produce an unusually soft hand and lustrous appearance.

North American Lace Co., Philadelphia, has sold a group of buildings to Harcourt Wells, Inc. A portion of the plant, including the finishing and part of the office building, has been leased back to the lace firm.

Fleetwood (Pa.) Hosiery Corp. has ceased operations.

A cotton spinning mill is being established by the Cuban government. Located in Gibara, on the northern coast of the easternmost Oriente Province, the mill is expected to be in operation some time in September.

Burlington Industries, Inc., has announced plans to spend approximately $40 million on modernization in the present fiscal year. * * * An agreement and plan for reorganization between **James Lees and Sons Co.** and Burlington Industries, Inc. has been reached whereby the former company will operate under its present name and as a wholly owned subsidiary of the parent firm. * * * The three plants of **Rhyne-Houser Mfg. Co., Inc.**, Cherryville, N. C., have been purchased by the firm. * * * The new research center, located adjacent to the May hosiery finishing plant of Burlington Hosiery Co. has been completed. The center houses facilities for quality control, chemical and physical testing, and research and development laboratories for all hosiery operations.

The assets, property, and plant of **Alma Mills, Inc.**, has been purchased by **Hamrick Mills**, Gaffney, S. C. No change in operation or personnel is anticipated.

At the annual convention of the Alabama Textile Manufacturers Association, safety awards were presented to the spinning and weaving division of **Tallassee Mills** and to the spinning division of **Avondale Mills.** Trophies for making the most improvement in safety records were awarded to the spinning division of **Adelaide Mills** and the spinning and weaving division of **Anniston Manufacturing Co.**

Recently, **Avondale Mills**, Sylacauga, Ala., held its 38th annual spring inspection by conducting a select group of guests through the denim plant at Pell City and the fancy-goods mill in Birmingham on the first day of the four-day event. The tour continued on the next day through the yarn plant in Sycamore and the extensive operations in Sylacauga (Central, Catherine, and Eva Jane plants). On the third day the LaFayette and Alexander City plants played host to the inspection party. At the Stevenson plant, on the final day, guests observed a truly large-package carpet yarn operation—two spinning bobbins per twister per 10-lb cone.

What method saves you **17%** of steel strapping?

See page 50

J. E. SIRRINE COMPANY

Engineers *Since 1902*

Textile Mills & Finishing Plants
Water Supply
Waste Disposal
Steam & Hydro Power Plants
Appraisals
Pulp & Paper Mills
Surveys & Reports

GREENVILLE, SOUTH CAROLINA

SUPPLIER NOTES

Kenneth C. Loughlin has been elected president of **Celanese Corporation of America**, succeeding Harold Blancke. Mr. Blancke will continue to serve as chairman and chief executive officer of the corporation. James R. Kennedy has been named to the newly created position of vice-president-financial. * * * Robert R. Leonard and John Allen Plant have been appointed mill marketing representatives by Celanese Fibers Co. They will assist in establishing and expanding liaison with the company's mill customers' sales offices and agencies in the New York market.

Vincent T. Elkind has joined the **Gagliardi Research Corp.**, East Greenwich, R. I., as senior research associate.

American Lava Corp., a subsidiary of Minnesota Mining & Manufacturing Co., has announced plans to build a new technical ceramics plant at Laurens, S. C. Production is expected to begin in the first half of 1961.

All of the common stock in **Faultless Caster Corp.** has been acquired by Walter W. Noelting, Clarence B. Noelting, and their families. Elmer H. Noelting, vice-president, treasurer, and director, has retired. Clarence B. Noelting continues as president and chief executive officer, and Walter W. Noelting has been named executive vice-president, and treasurer. C. Bernard Noelting has been elected vice-president, secretary, and director; Robert B. Furris has become vice-president, assistant secretary, assistant treasurer, and director.

Paul Seydel, formerly executive vice-president, has been elected president of **Seydel-Woolley and Co.**, succeeding Vasser Woolley, who remains chairman of the board of directors. David Meriwether has been named vice-president and Carl Blumenstein, formerly research director, has been appointed technical director.

A $1-million contract for all of the electrical drives to equip a 50,000-spindle textile mill in Russia has been awarded to the **Westinghouse Electric Corp.**

John Cordes, Jr., has been named sales manager of the burlap piece goods department of the **Bemis Bro. Bag. Co.**

Ernest St. Louis has been appointed technical coordinator of **Metro-Atlantic, Inc.** Mr. St. Louis is located in the Centredale plant and will be responsible for coordinating the laboratories, production, and technical service.

Richard E. Coffey has been promoted to the newly created post of general sales manager for **Walter E. Heller & Co.**

William E. Turner has been appointed assistant divisional manager of **Draper Corp.** Mr. Turner will remain in the Spartanburg, S. C. office.

The marketing division of **American Enka Corp.** has moved into the company's new corporate office building in Enka, N. C. * * * The merchandising department and the New York district sales office is now located on the 74th floor at 350 Fifth Avenue, New York 1, N. Y.

Richard F. Amacher, formerly in charge, has been appointed divisional vice-president of Corn products sales for **Anheuser-Busch, Inc.** Carl E. Witter has been named divisional vice-president of production for the yeast & corn products division.

SAB Chemicals Co., Jersey City, N. J., has been appointed representative for **Rhodia, Inc.**, in the states of New York, New Jersey, Pennsylvania, and the New England States for special applications to overcome urea formaldehyde odor in textile finishes and plants and for the reodorization of finished textile products.

Why Wrinkle Your Brow
Over Wrinkles in Cloth?
get
MECHO AIR GUIDER

Streamlined, it is precision-engineered, and accurate to within one-eighth of an inch. It ranges from 1 to 400 ypm.

Mecho's selvage finger is highly sensitive, yet very strong. It will prevent double edges turning on cloth. Mecho's adjustment lever changes the selvage finger tension (to accommodate any cloth from the lightest to heavy #8 duck) . . . *while in operation!*

Everyone engaged in wet processing needs a cloth guider, so make yours Mecho and forget your troubles.

Mecho Air Guiders can do your job; they guarantee you "Miles of Cloth without a Wrinkle." They've been standard equipment in hundreds of finishing plants for a quarter of a century! Their efficient and reliable simplicity makes them simply great! Why wait?

Write today for this helpful FREE Mecho Air Guider Catalog.

THE Guider SPECIALTY COMPANY

431 West Rock Avenue—New Haven, Connecticut
Southern Representatives:
McSpadden and Scantland, P. O. Box 3635, Charlotte 3, N. C.

Mr. Files
Ludell Mfg.

Mr. Seidel
Dow Chemical

Mr. Giles
Fairbanks

Mr. Shattles
Fairbanks

Leon Seidel, customer service representative for **The Dow Chemical Co.'s** fibers sales department, has been transferred to the New York office as merchandise manager for filament products.

A southeastern division office has been established in Orangeburg, S. C., by **Ludell Manufacturing Co.,** Milwaukee, Wis. W. R. Files has been appointed manager, working in conjunction with the Greensboro and Gastonia offices of the Kincaid Engineering Co., representing Ludell in the Carolinas and southern Virginia; the A. G. Brown Co., Chattanooga, Tenn.; and the G. K. Moss Co., Birmingham, Ala.

The Fairbanks Co., New York City, has announced the transfer of Joel R. Shattles from the Virginia-eastern North Carolina sales territory to the Florida-southern Georgia territory, and A. T. Giles has been assigned to replace Mr. Shattles in Virginia-eastern North Carolina.

B. R. Celentano, formerly a member of the technical department of **Verona Dyestuffs,** has been named representative for the eastern half of North Carolina.

Eldridge J. Black, formerly vice-president of sales for **Stepan Chemical Co.,** has been named vice-president and general manager of the newly-formed Industrial Chemicals division.

Both the Charleston, S. C., and Charlotte, N. C., branches of **Livingston & Haven, Inc.,** have been made distributors of Parker industrial tube and hose fittings, products of Parker-Hannifin Corp. Also, the Charlotte branch has been appointed distributor for Crown air pressure regulators, air filters, and lubricators, products of the same manufacturer.

Leesona Corp. has announced receipt of orders for the Unifil Loom Winder from Stonecutter Mills Corp., Spindale, N. C.; Shelby Mills, Inc., Shelby, N. C.; Boontex Fabrics Corp., New York. A repeat order has been received from Woodside Mills for the Haynesworth plant.

Full scale testing facilities for chemicals used in textile and other applications are now in operation in **Food Machinery and Chemical Corp.'s** chemical research & development center at Princeton, N. J. The new inorganic applications sections are directed by the general manager, Fred R. Sheldon, and B. K. Easton heads textile applications.

E. H. Staab has been named Mid-Atlantic sales manager of **Putnam Chemical Corp.** From his headquarters in Ridgefield Park, N. J., Mr. Staab will be responsible for

What method saves you **17%** of steel strapping?

See page 50

FORESIGHT
CAN SAVE YOU . . .
MONEY!

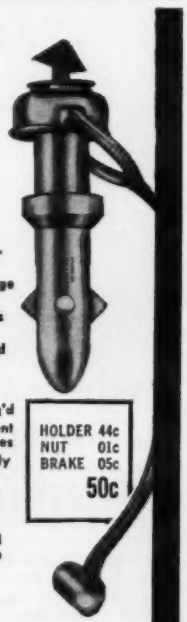
ANDERSON SHIELDS

will reduce . . .
CHIPPING — SPLITTING
BREAKING
of your . . .
SPOOLS AND BOBBINS

Send Us Your Problems:
We Will Cooperate
— To Save You Money.

TEXTILE SHIELD CO., INC.
LAWRENCE, MASS., U.S.A.
SERVING NEW ENGLAND SINCE 1917

AMERICA'S FINEST
POSITIVE-LATCHING
BALL BEARING
BOBBIN HOLDER



- Easy tripping—Positive latching—Freest running—Bulletnosed
- Faster for Operator to change
- Stainless steel precision balls—Stainless steel races—No rust drag
- The only thoroughly sealed ball assembly in any B.H. Prevents lint drag even after 2 or 3 years
- Short travel—Low head req'd
- Wide smooth fingers prevent cutting of bobbin inner edges
- Serviced for life at assembly and double riveted
- Streamlined die cast brake (or stamped or wire brake avail.)
- Speednut slips through rail slot—doesn't have to slide from railend
- Shipped completely assembled
- Finest B. H. avail. at any price
- One size fits 8 x 4 thru 12 x 7 bobbins

HOLDER 44c
NUT 01c
BRAKE 05c
50c

Whitehead bobbin holders can be specified for your creels thru all the best creel mfgs.
Also available direct for thread boards

Patented, Manufactured and Guaranteed
WHITEHEAD DIE CASTING CO.
1198 ZONOLITE ROAD—ATLANTA 6, GA.

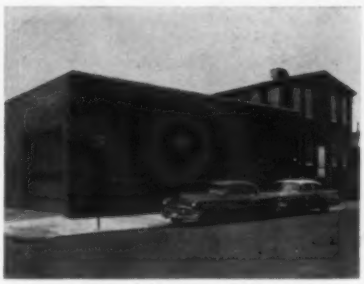
SUPPLIER NOTES

(from page 195)

sales in the states of New Jersey, Pennsylvania, New York, Maryland, Delaware, northern Virginia, eastern Ohio, and western Connecticut. * * * Construction has begun on the new southern office, laboratory, and warehouse in Charlotte, N. C. Temporary facilities have been set up at 1229 W. Morehead St., until the new building is completed.

Texize Chemicals, Inc., Greenville, S. C., has announced the formation of a new textile finishing division which will enlarge the company's services to finishing plants. J. H. Cochran has been named supervisor and W. J. Patterson has been appointed to assist Mr. Cochran. * * * Installation of new processing equipment in the newly constructed addition to the mixing and manufacturing plant has been completed.

The fibers division of **American Cyanamid Co.** has named Herbert C. Haller manager of the fibers application laboratory at its Bound Brook plant. The new center provides processing equipment for dyeing and finishing, and for yarn and fabric



Air-Perme-Ator Mfg. Co., Paterson, N. J., manufacturers of indoor weather control systems, recently completed this new building containing 5,000 sq ft of space adjacent to its main office and plant.

applications programs. * * * James E. Ryan has been appointed to the newly created post of district manager of New York sales. * * * John V. Tharrett has been named home furnishings merchandising manager of the fibers division. In his new post, Mr. Tharrett will direct merchandising programs for Creslan acrylic fiber in the blanket, carpet, rug, and home furnishings fabric fields.

Eric H. Loytty has been named a product specialist for equipment manufactured for the textile industry by **Corning Glass Works.**

One unit of the multi-million dollar plant of **E. I. du Pont de Nemours & Co., Inc.,** located at Old Hickory, Tenn., has been completed and has begun commercial production of Dacron polyester fiber.

Mitchell-Bissell Co., Trenton, N. J., has acquired the steel dies of the former Page-Madden Co. Many of the special patterns formerly sold under the Page-Madden name are available from the former company.

Willcox & Gibbs Sewing Machine Co. has announced the appointment of Dallas Denmark as a technical sales representative to cover the state of Louisiana and lower Mississippi. R. T. Toney has been promoted to the staff of sales service personnel, and assigned to the South Carolina area. Edward Bousek has become a technical sales representative in the newly created Cook county, Illinois, territory covering the Chicago area.

Don Pemberton has been appointed sales representative for **Fulton Cotton Mills,** Atlanta, Ga. Mr. Pemberton will call on industrial textile users in Michigan from his headquarters in Detroit.

Mix and move fluids quickly ... pump direct from drum!

Graco Fast-Flo Pumps reduce handling costs. They transfer measured amounts of different fluids direct from original containers. Ideal for batching, applying or mixing . . . fluids are transferred quickly and safely. Aids good housekeeping: eliminates contamination.

Send for more information about this amazing *Graco* Fast-Flo that's suited both for large and small operations. It handles materials as thin as alcohol, as thick as cookie frostings! Fast-Flo Pumps are also available in stainless steel. Send for free idea booklet!

For nearest GRACO Supplier SEE the telephone directory YELLOW PAGES Look under "SPRAYING EQUIPMENT"

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PERFORMANCE GUARANTEED
with HERBERT
STATIC ELIMINATORS
in the Act!

MAKE US PROVE that our **Oxy Cold Bars** or **Curastats** are the complete answer to your static problems. Send details of your requirements for recommendations and literature.

HERBERT PRODUCTS, INC.
174 LINDEN AVE., WESTBURY, N. Y.

ANTI-FRICTION
HIGH SPEED
MEADOWS TWISTERS

MEADOWS MANUFACTURING CO.
Established 1931
ATLANTA, GA. U. S. A.

Mr. Jones
Patchogue-Plymouth

Mr. Wylly
Dean Bros.

Mr. Brown
Frank G. North

Mr. Franklin
Air Reduction

Mr. Dalton
Whitin

Mr. Bolton
Whitin

L. Woody Brown has been named a sales and technical service representative for **Frank G. North, Inc.,** and **Pioneer Heddle and Reed Co.** Mr. Brown will call on customers in the Greensboro, N. C., area.

S. Terry Jones has been appointed southern regional representative for **Patchogue-Plymouth Corp.**

Dean Brothers Pumps, Inc., has announced the establishment of a regional sales office in Atlanta, Ga. William B. Wylly, formerly southeastern manager for Fairbanks-Morse, has been named to head the new office. Territory under his direction includes Florida, Georgia, South Carolina, and part of Alabama.

Air Reduction Chemical Co., a division of Air Reduction Co., Inc., has opened a new sales office at 2300 South Blvd., Charlotte, N. C. Lloyd E. Franklin, Jr., is sales and development representative. Mr. Franklin will handle Airco Chemical sales and service in the southeastern states of North Carolina, South Carolina, Georgia, Alabama, Florida, and eastern Tennessee.

Du Verre, Inc., has completed the erection of a large, modern steel frame building which will be used for office space and manufacturing.

George D. Everett, Bangor, Me., has been elected a director of the **Whitin Machine Works.** John H. Bolton, Jr., has been promoted from vice-president—director of sales to vice-president—marketing, and Robert I. Dalton, Jr., has been named vice-president—domestic sales. * * * J. Lawrence Orr has been appointed Charlotte regional sales manager, and Joseph P. Sills has been named service supervisor. R. Knox Clement, former service supervisor, has been promoted to salesman. * * * Benjamin B. Peacock has assumed duties as Atlanta, Ga., regional sales manager; Richard W. Dunn has been promoted to assistant regional sales manager, and David A. Wagstaff has been named service supervisor. * * * M. W. Keeler has assumed duties of regional sales manager—cotton for northern United States and Canada. Mr. Keeler will be assisted by Harold

AMERICA'S SPRING STEEL DISTRIBUTOR

We have had over fifty years experience furnishing steel for both builders of TEXTILE MACHINES and makers of replacement parts for KNITTING MACHINES.

Modern Slitting and Shearing Equipment

WARD STEEL CO.

87-G RINDGE AVE. EXTENSION
CAMBRIDGE 40, MASS.

PHONE—
UNIVERSITY 4-2460

ONE COILER EXCELS!

McDONOUGH

There are more McDonough large coilers in use than any other make. Try one in your mill without obligation and learn why.

McDONOUGH POWER EQUIPMENT, INC.
McDonough, Georgia, U.S.A.

SAMPLE-CUTTING
PINKING MACHINES

All Sizes — hand and power

From 6½" Portable Model to 50" Power Unit

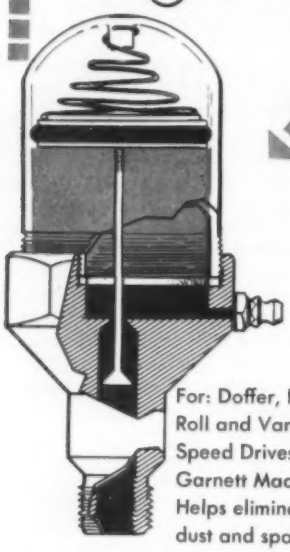
Write Today For Full Information.

CHANDLER MACHINE COMPANY

234 West St., Ayer, Mass.

Manufacturers of
World Famous PLEATING MACHINES

AUTOMATIC
SELF-FEEDING
LUBRICATION
WITH
VISUAL CONTROL!



For: Doffer, Feed Roll and Variable Speed Drives; Garnett Machinery. Helps eliminate dust and spoilage.

LUBRIMATIC GREASE CUPS

Eliminate costly downtime and wasted lubricants, save 75% of labor costs, protect bearing seals, give lasting protection for equipment.

- Large, 4-ounce lubricant reservoir
- Vented, clear, shock-resistant plastic cylinders — easy view of lubricant supply
- Spring and weighted plunger feeds grease to bearing with predetermined pressure.
- Protective valve seats when cup is full, prevents grease pressure from damaging bearing seals.
- Housing — corrosion-resistant — built to last for the life of your equipment.
- Internal ⅛" and external ⅜" standard pipe threads, easily adapt to fit any bearing.

Order NOW to protect your valuable equipment FOR YEARS!

LUBRIQUIPMENT
ENGINEERS, INC.
P. O. BOX 9194-D • FORT WORTH 7, TEXAS

SUPPLIER NOTES

(from page 197)

T. Heathcote, salesman for this region. * * * An order has been received from Stowe Spinning Co., Belmont, N. C., for Piedmont spinning frames (2496 spindles).

American Viscose Corp., has established an industrial packaging department. Avistrap, a rayon cord strapping, is the unit's first product. Robert K. Scharff has been named general manager of sales.

A complete line of algae and moss extracts for use in printing, dyeing, sizing, and finishing is now available from **Edward Mendell Co.** Algea Produkter, A/S Kristiansund, Norway, has appointed the Yonkers, N. Y., firm as sole import representatives and sales agents in the U. S. for the Carrageen products and other Irish Moss extractives manufactured by the firm.

Edwin L. Wiegand Co. has acquired Barber Infrared Associates. The latter will operate as a subsidiary under the name of **Radcor, Inc.**, and will specialize in design, production, and application of complete electric infrared ovens, low-temperature furnaces, radiant space heaters, fluid heat-transfer systems, and asphalt plant heating equipment. I. J. Barber is general manager.

David L. Eynon, Jr., has been elected chairman of the board, and John A. Scott has been named president of the newly formed **Sinclair-Koppers Chemical Co.** The new corporation is owned jointly by Sinclair Oil Corp. and Koppers Company, Inc. Plans have been announced for the construction of a petrochemical plant to be erected at Houston, Texas, to produce styrene monomer, a basic chemical used in the manufacture of plastics, synthetic rubber, latex, and other products.

Chesterfield, Virginia, has been selected as the site for the new apparel nylon plant of **Allied Chemical Corp.** An arrangement has been made with Snia Viscosa, S. P. A. of Milan, Italy, to furnish technical assistance and certain equipment for the new plant to be built by Allied and operated by its **National Aniline Division.** Upon completion of the facility next year, the firm's over-all nylon fiber capacity will be over 80 million pounds annually.

CLASSIFIED

BOBBINS—BOBBINS—BOBBINS

Our specialty is good used automatic loom bobbins. We also deal in twister and roving bobbins. Send us samples of what you need or what surplus bobbins you have.

CHARLES G. STOVER COMPANY
West Point, Georgia

STATIC ELECTRICITY STEALS profits, causes fires and explosions! Kill it with inexpensive, trouble-free Static Eliminator Brushes. Fully guaranteed—thousands in use. Send for free illustrated folder today. Western Brush Co., Dept. T, 215 S. Western, Chicago 12, Ill. 2-60

BRASS PIN-PLATES All Sizes

PUT YOUR PIN TENTERS IN TIP-TOP CONDITION

SEND US OLD PLATE FOR QUOTATION

Pins in Stainless, Monel, Plain Steel.

All Diameters Any Length

SOUTHERN TEXTILE WORKS
P. O. BOX 194 ANDERSON, S. C.

Assistant Superintendent or superintendent of yarn preparation, warp preparation and weaving, experienced in all phases of cotton mill operation, desires to make change. Married, age thirty-seven. Prefer to locate in Southern or Mid-Western States. Write Box 93, TEXTILE INDUSTRIES 806 Peachtree Street, N. E., Atlanta, Georgia.

MANAGEMENT EXECUTIVE

Twenty two years experience in Textile Finishing. Extensive record of accomplishment in various phases of plant management including engineering of new plant. Excellent record for employee relations. Resume on request. Box number 92, Textile Industries, 806 Peachtree St. N. E., Atlanta 8, Georgia.

WANTED Fiberglass waste cloth yarns or mat. Any quantity. Molex products Co., 9315 Southview Ave. Brookfield, Illinois.

FOR SALE Ten Georgia Comet Knitting Machines with rubber attachment. Three 18 point Loopers. Comet steady dial with motor, Stand, etc. Two Hepworth Loopers, 18 points with motor, Stands, Etc. Also necessary accessory. Equipment all in good condition. Contact Mrs. M. C. Paris - 2126 Meadow Avenue SE - Atlanta, Ga.

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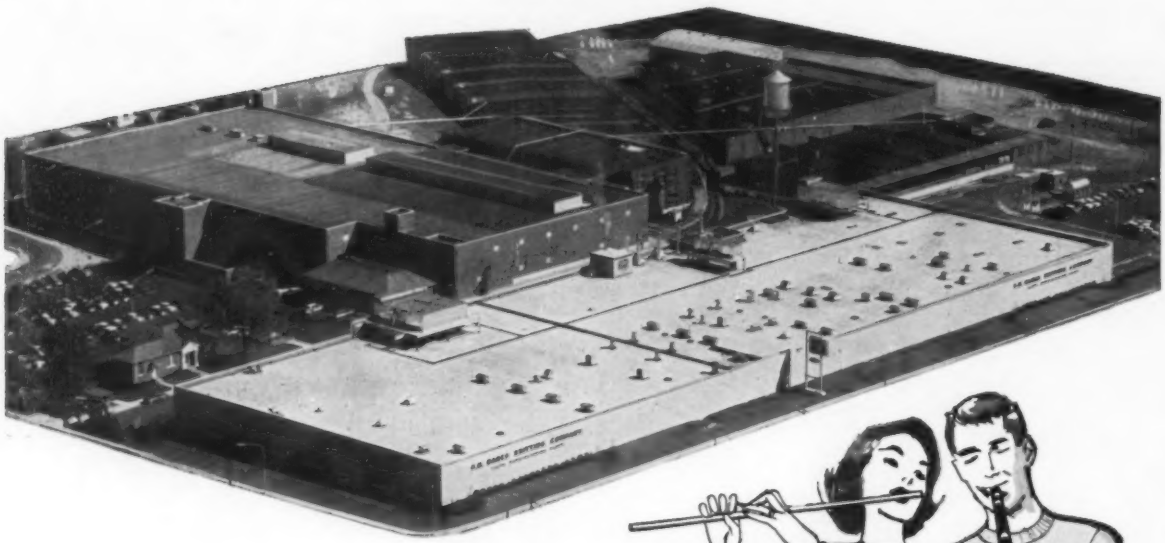
NEW WINSTON SALEM PLANT

PRODUCES FABRICS FOR HANES *Knitwear for the family*



When the P. H. Hanes Knitting Company faced the problem of increasing production to meet the growing demand for their "Knitwear for the Family," Robert and Company Associates were called on to make a thorough study of Hanes' present facilities. Finding existing facilities inadequate for additional production, a new plant adjacent to Hanes' yarn mill in Winston-Salem was recommended.

This modern, 126,000 square foot plant, complete with power plant, central station humidification and air conditioned offices is intregrated with the existing yarn mill. The combined operation includes facilities for spinning, winding, yarn storage and conditioning, knitting, cloth storage, bleaching, dyeing, finishing and shipping.

If your plans call for increased productivity and efficiency, draw on Robert and Company Associates' 42 years of experience in serving the great names of the textile industry.

ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

The ALDRICH *Synchronized Single Process* *Picker...*

A BIG HELP TO BETTER YARN

In a modern mill with few doublings and long drafts, the picker lap is the foundation on which everything else rests.

THE ALDRICH SYNCHRONIZED SINGLE PROCESS PICKER

makes a lap out of a lap instead of from a box full of loose, irregularly lumped cotton. This principle of making the lap out of a well felted lap assures more uniform inch-by-inch weight in the finished lap, and more uniform sliver, roving and yarn.

The Aldrich Lap Weight Indicator tests the lap as it is made and helps to get that great inch-by-inch uniformity which makes a really good lap.

AldricH MachinE WorkS

Greenwood, South Carolina

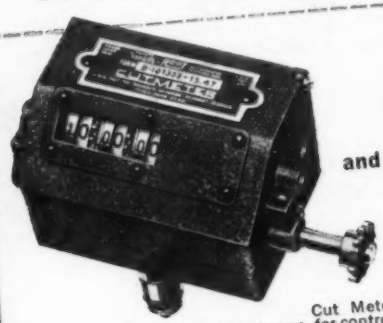
Veeder-Root helps you Cost-Countrol your Mill...

From Pick Counters...

2-3-4 Pick, Hank, Yardage & Knitting Machine Counters

These flexible counters record production separately for each of 2, 3, or 4 shifts, providing a basis for wage payment, production planning, production efficiency, calculations, etc.

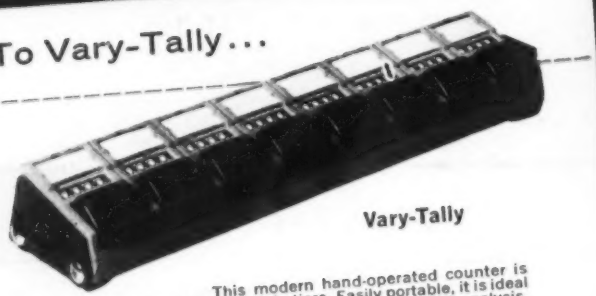
To Loom-Cut Meters...



Loom Cut Meters and Predetermining Counters

Cut Meters are predetermining counters for looms, for controlling lengths of cloth woven, without cut marks . . . and thus avoiding over-runs and short pieces.

To Vary-Tally...



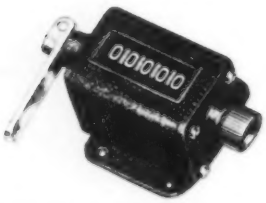
Vary-Tally

This modern hand-operated counter is arranged compactly on stands in tiers. Easily portable, it is ideal for order, stock, inventory control, sales and market analysis, payroll denomination, estimates, traffic control and product inspection. Can be supplied in any of 67 combinations up to 6 tiers high and 12 units wide.

Pick counters, designed to help you control your production; loom cut meters for presetting cut-lengths; Vary-Tally for hundreds of order, stock, inventory control, inspection, analyses uses — These are but a few of the many Veeder-Root counters which can make your profit-picture brighter.

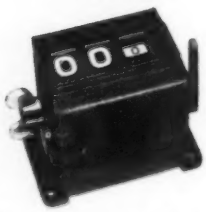
Veeder-Root counters help modern mills to *Countrol* production and costs . . . with accurate, up-to-the-minute data. Your local Veeder-Root representative can give you details on how to completely equip your mill with these dollar-saving counters. Call him in today.

Small Reset Counters



Used on a wide variety of textile machines, including breakers, winders, marking machines, knitting machines and bobbin strippers.

Hosiery Dozens Counter



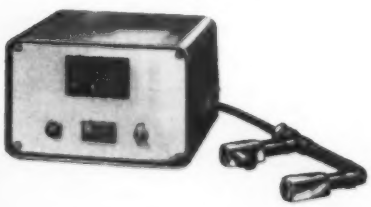
Used in inspection or on knitting machines (as a production counter) . . . shows single pairs and total dozens count.

Double-Wheel Measuring Counters

Ball Bearing — "Exact Ratio" Geared Reset Counter registers linear units (feet, yards, ⅛ of a yard) as material passes under the friction wheels.

High Speed Reset Double Wheel Counter runs suitable from a shaft, measuring drum, cloth, paper, or other material at speeds up to 6,000 rpm or 8,000 cpm.

Count/Pak



One of the new Veeder-Root Count/Paks — an economical device for high velocity, noncontact counting and controlling. Ideal for use on bobbin strippers, also used on folders to permit multiple folder control by a single operator. Speeds up to 2,500 counts per minute with absolute accuracy.

Reset Magnetic Counters

Base or panel mounted. Ruggedly built for speeds up to 1,000 counts per minute. Widely used for remote indication.

Veeder-Root

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